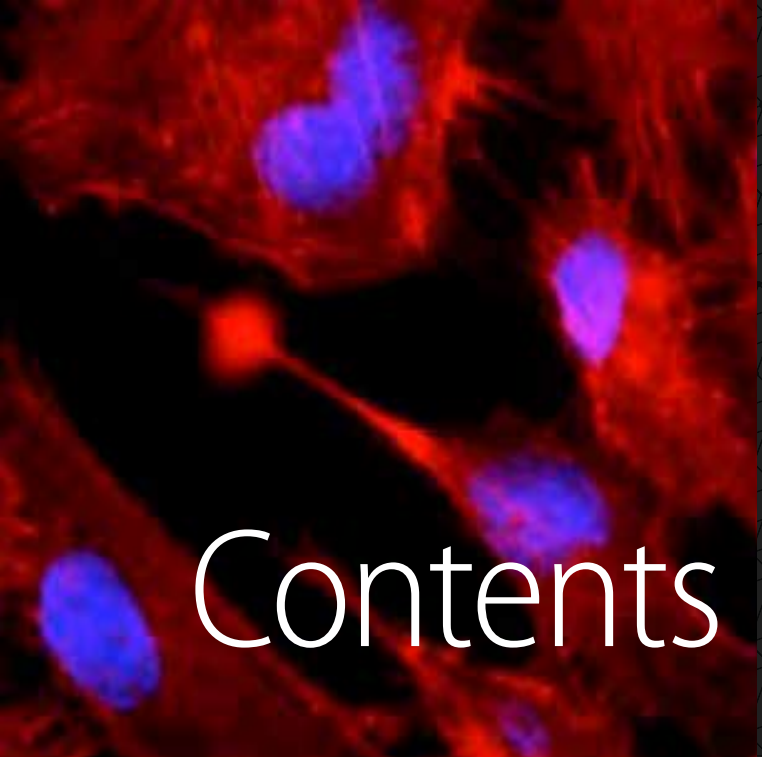
BioMed@TAU

2018 Year in Review

Collective of **biomedical research hubs** that aim to strengthen **collaborative research** between scientists at TAU

TEL AVIV UNIVERSITY
אוניברסיטת תל אביב



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Biomed@TAU Research Hub
Director: Prof. Karen B. Avraham

Manager: Alana Hassan, EMPH

Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel | **Website:** https://en-med.tau.ac.il/biomed_tau

Biomed@TAU Research Hub activities are supported by the office of the President of Tel Aviv University

About BioMed@TAU

BioMed @TAU is an initiative that promotes **interdisciplinary excellence in biomedical research** at Tel Aviv University.

BioMed@TAU is a collective of biomedical research hubs at Tel Aviv University. The biomedical scientific community at TAU performs a vast array of research, encompassing basic to translational research spread across several faculties and hospitals. **The Hubs gather together scientists from across the University and in TAU-affiliated hospitals who share overlapping research interests.** These collaborative groups host conferences and events related to their subject area in order to highlight advances in the field as well as in their own research. The Hubs also provide the opportunity to strengthen collaborative research between scientists at TAU and leverage opportunities for collaborative research, joint grant applications and external funding.

Highlights 2018

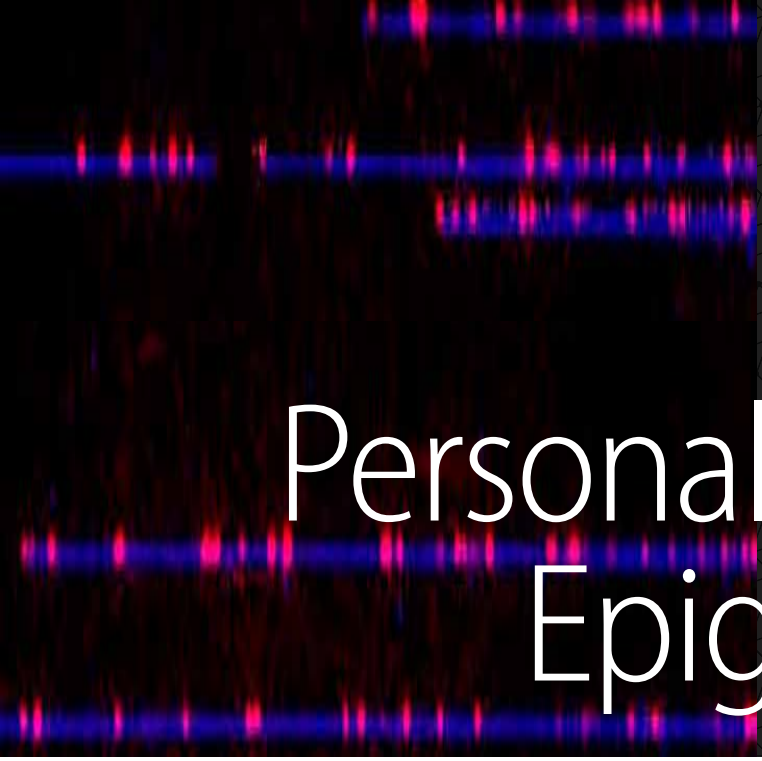
9 **active research hubs**

3 **new hubs** formed

21 **events** held in 2018

16 international **keynote** speakers

Attendees from **5** TAU faculties



Personalized Epigenomics

This rapidly growing field encompasses research into such areas as **embryonic development, plant biology, neurodegenerative disease** and **cancer**.

The BioMed@TAU Research Hub in Personalized Epigenomics brings together the community of TAU researchers involved in exploring the epigenetic basis of normal development and disease. These investigators come from across the TAU faculties and affiliated hospitals and share an interest in the processes that alter gene activity without changing the DNA sequence.

ENERGIZE RESEARCH
With members hailing from 4 different TAU Faculties and 3 different hospitals, researchers can connect across disciplines.

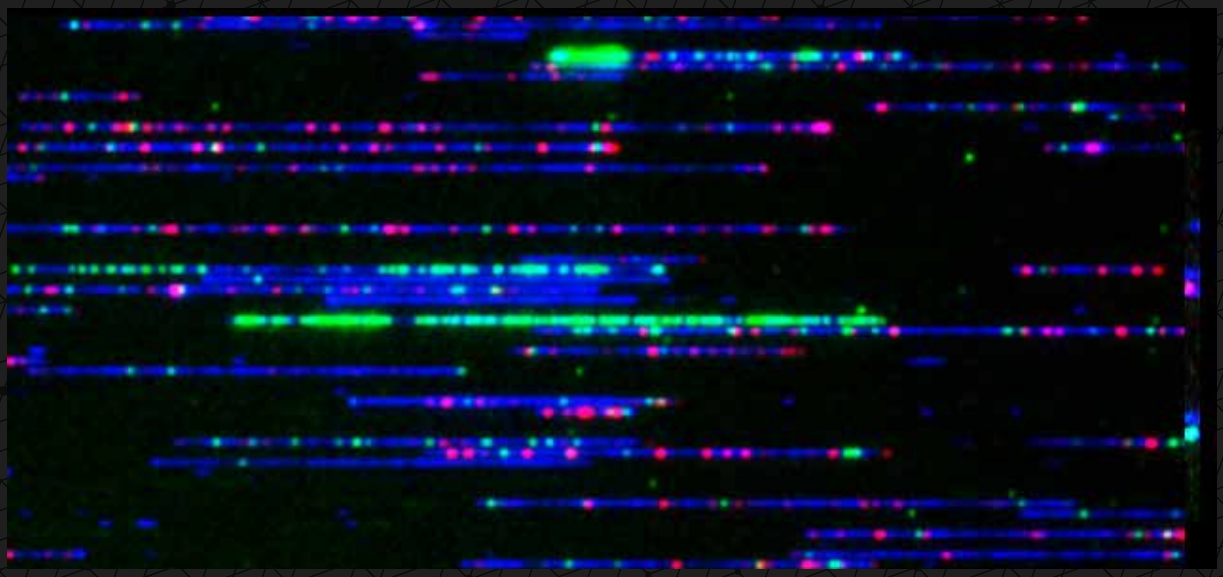
ATTRACT INTERNATIONAL SPEAKERS
Speakers came from EMBL-EBI (UK) and Bionano Genomics, Inc. (USA).

INCREASE VISIBILITY
Nearly 100 people attended Single-cell RNA Analysis workshops offered over 2 days in both basic workflow and advanced concepts.

Members from

Faculty of Medicine, Faculty of Life Sciences, Faculty of Exact Sciences, Faculty of Engineering, Schneider's Children Hospital, Sheba Medical Center, Rabin Medical Center

Dr. Yuval Ebenstein, Ph.D.
Research Hub Director

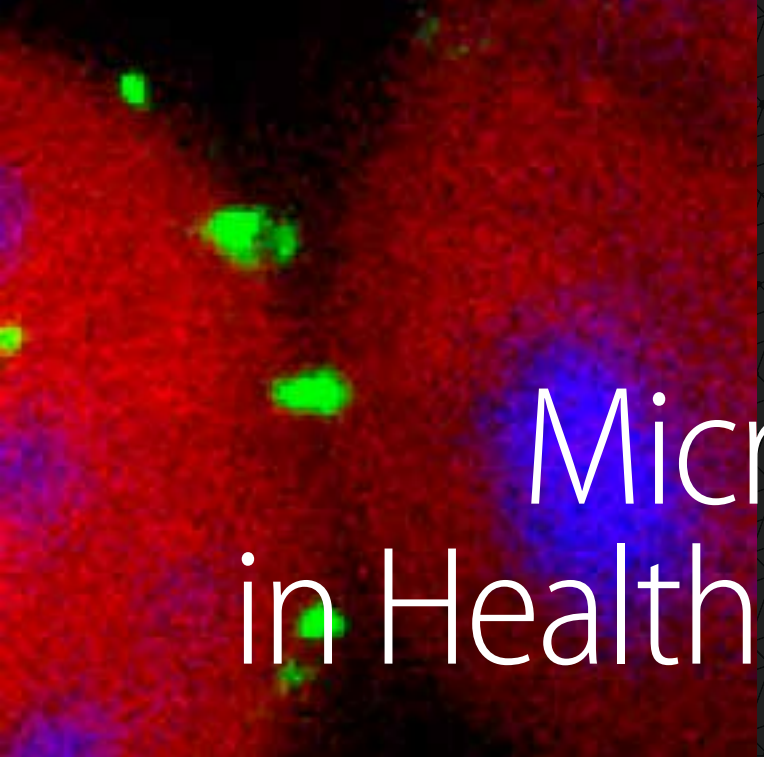


Events in 2018

May 22/23 Single-Cell RNA Analysis Workshop Interface

Dec 5 Bionano Genome Mapping: High-Throughput Mapping of Structural Variation in Cancer and Genetic Disease

Website: https://en-med.tau.ac.il/biomed_tau/



Microbes in Health & Disease

The Hub includes researchers from faculties across the University and TAU-affiliated hospitals, whose research involves **microbiology, the microbiome,host/pathogen interactions** and the **effects and responses to antimicrobial drugs and compounds**.

ENERGIZE RESEARCH
With members hailing from 2 different TAU Faculties and 4 different hospitals, researchers connected across disciplines.

SYMPOSIUMS
The Microbes Hub hosted 2 symposiums, bringing international keynote speakers from Brussels and Paris.

INCREASED VISIBILITY
More than 150 people attended events for the Microbes Research Hub including scientists, clinicians and students.

Members from

Faculty of Medicine, Faculty of Life Sciences, Meir Hospital, Schneider's Children Hospital, Sheba Medical Center, Sourasky Medical Center

Prof. Judith Berman, Ph.D.
Research Hub Director

Dr. Yariv Wine, Ph.D.
Research Hub director

Events in 2018

Jan 25 Immunity at the Human Maternofetal Interface

Dec 6 From Microbiomes to Living Systems

Website: https://en-med.tau.ac.il/biomed_tau/microbes

Pain Forum

Chronic pain is a significant public health problem and is considered as an illness in its own right. The multitude of pain conditions requires a range of research and treatment approaches. For this reason, the Pain Research Hub brings together health professionals and researchers to **increase collaborative research** and develop **innovative strategies to better measure and manage pain**.

RESEARCH
This research hub has the most diverse affiliation. With members hailing from 5 different TAU Faculties and 8 different hospitals, researchers connected across disciplines and locations.

HUB EVENTS
The Pain Forum hosted a breakfast meeting and a symposium on pain research in Israel in collaboration with The Center for Research on Pain, Hebrew University

VISIBILITY
Pain Forum events attracted more than 100 students, researchers and clinicians from across Israel

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Members from

Faculty of Medicine, Faculty of Life Sciences, Faculty of Exact Sciences, Faculty of Engineering, Schneider's Children Hospital, Sheba Medical Center, Rabin Medical Center

Prof. Ruti Defrin, Ph.D.
Research Hub Co-Director

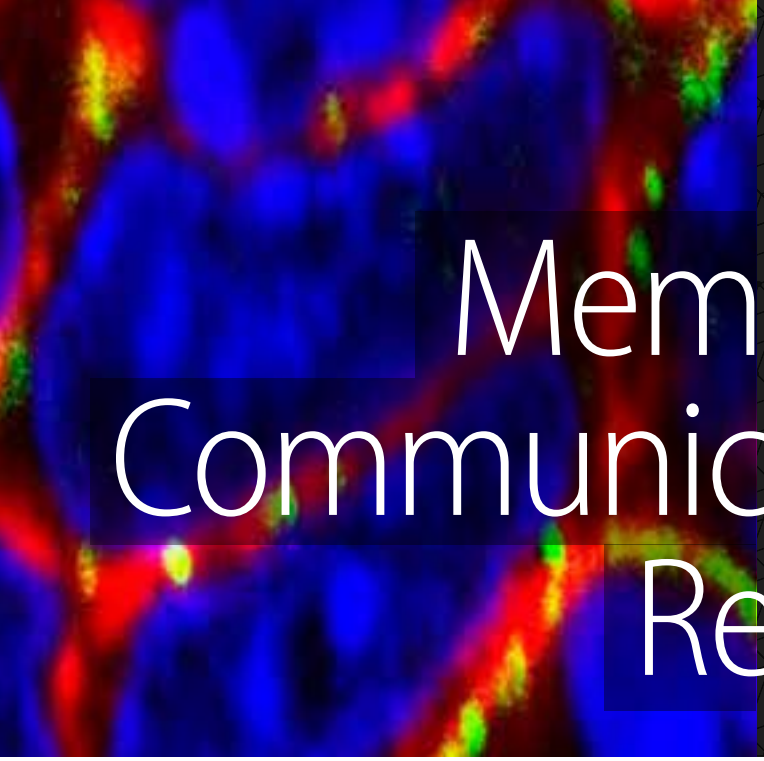
Dr. Silviu Brill, M.D.
Research Hub Co-Director

Events in 2018

Jan 15 Breakfast Meeting

Feb 26 Pain Research in Israel, in collaboration with The Center for Research on Pain, Hebrew University

Website: https://en-med.tau.ac.il/biomed_tau/pain



Membrane Communication & Remodeling

Intra and intercellular communication mediated by protein transport and membrane remodeling are essential processes for normal physiology, whose malfunctioning is linked with pathological pathways and disease.

Our goal is to bring together researchers from all over TAU campus, including TAU-affiliated hospitals, who share research in the broad area of cell communication and membrane trafficking and remodeling.

ENERGIZE RESEARCH
With members hailing from 4 different TAU Faculties and Sheba Medical Center, researchers connected across disciplines.

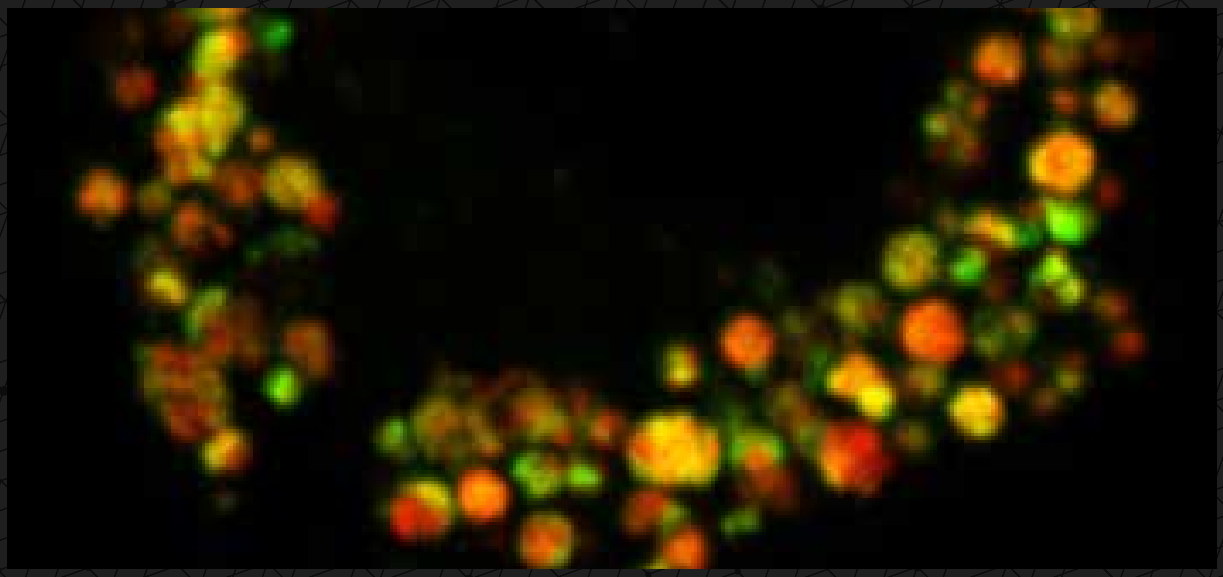
STUDENT ENGAGEMENT
Two symposiums took place, bringing international keynote speakers from France and Germany.

INCREASED VISIBILITY
Nearly 100 people attended hub events in 2018.

Members from

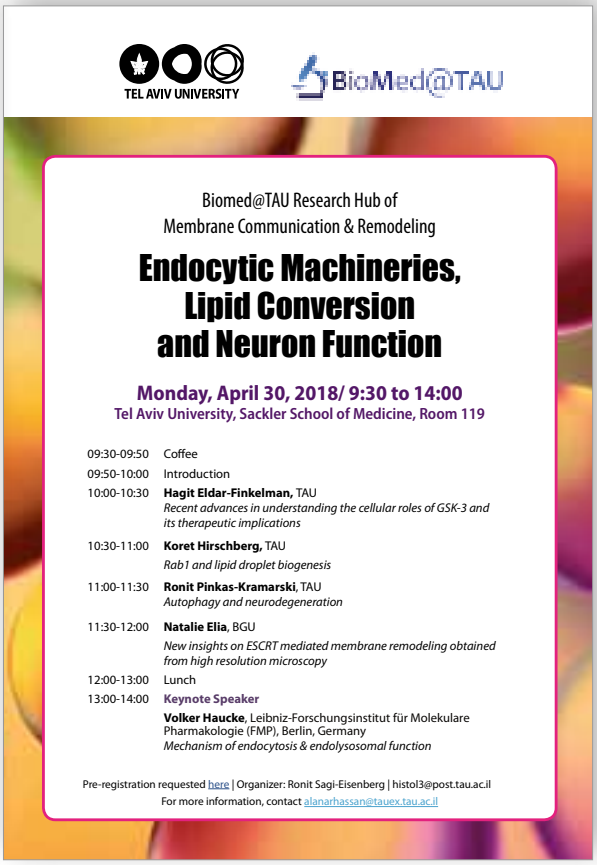
Faculty of Medicine, Faculty of Life Sciences, Faculty of Exact Sciences, Faculty of Engineering, Schneider's Children Hospital, Sheba Medical Center, Rabin Medical Center

Prof. Ronit Sagi-Eisenberg, Ph.D.
Research Hub Director



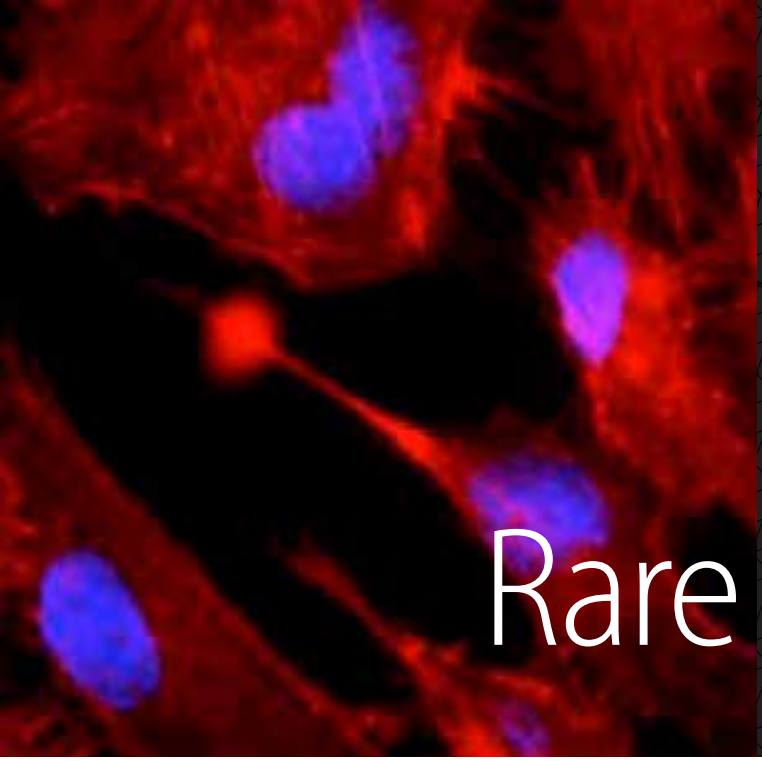
Events in 2018

March 26 Membrane Trafficking and Immune Cell Functions



April 30 Endocytic Machineries, Lipid Conversion and Neuron Function

Website: https://en-med.tau.ac.il/biomed_tau/membrane



Rare Diseases

An estimated 6% of the population is afflicted with a rare disease, a number comprised of predominately children (80%). This means that in Israel alone, rare diseases may affect around half a million people and impact the lives of many more, including parents and siblings. For this reason, we formed the Research Hub in Rare Diseases at Tel Aviv University in collaboration with the Sheba Medical Center's Institute of Rare Diseases to address the challenges linked to the care of these patients and their families.

EMPOWER PATIENTS
With a strong network of researchers, clinicians and other partners, the Research Hub in Rare Diseases has the potential to target user communities (including industry partners) and policy makers and thus better empower patients and parents.

ENERGIZE RESEARCH
The health of these individuals and their families is a major societal challenge for Israel, and it requires the development of personalized adapted medicines and treatment strategies.

INCREASED VISIBILITY
More than 100 people attended 2 events in 2018 with international speakers from France and USA

Members from

Faculty of Medicine, Faculty of Life Sciences, Faculty of Engineering, Sheba Medical Center, Dana's Children's Hospital, Rabin Medical Center, Assaf HaRofeh Medical Center

Prof. Miguel Weil, Ph.D.
Research Hub Co-Director

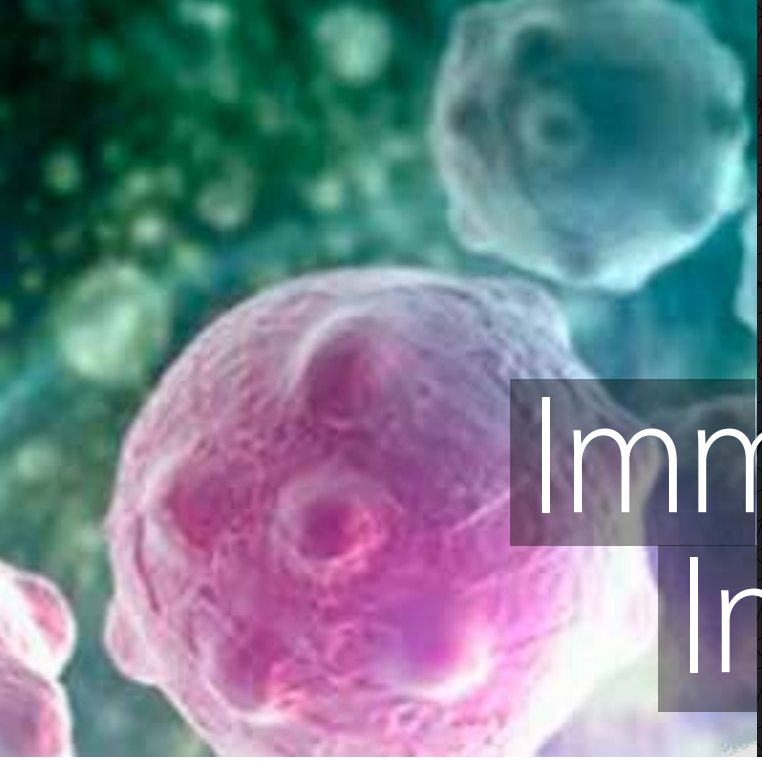
Prof. Annick Raas-Rothschild, M.D.
Research Hub Co-Director

Events in 2018

May 29 Rare Diseases: From Patients to Bench and Back

Dec 2 A New Age for Treating Rare Diseases

Website: https://en-med.tau.ac.il/biomed_tau/rare_diseases



Immunity & Inflammation

The BioMed @ TAU Research Hub in Immunity and Inflammation brings together the community of people at TAU working with immunity and inflammation. The Hub includes researchers from faculties across the University and TAU-affiliated hospitals, whose research encompasses areas such as **immunology, immuno-therapy, inflammatory diseases, immuno-oncology, immuno-metabolism** and **neuro-immunology**.

MEMBERS
With members hailing from 4 different TAU Faculties and hospitals, researchers connected across disciplines.

EVENTS
Two symposiums took place in 2018. One was held in honor of Prof. Nechama Kosower's 90th birthday and the other symposium offered selected students and post doc scholars the opportunity to present lightening talks on their research.

SPEAKERS
Keynote speakers came from Germany and USA.

Members from

Faculty of Medicine, Faculty of Life Sciences, Ichilov Hospital, Schneider's Children Hospital, Sheba Medical Center, Bellinson Medical Center

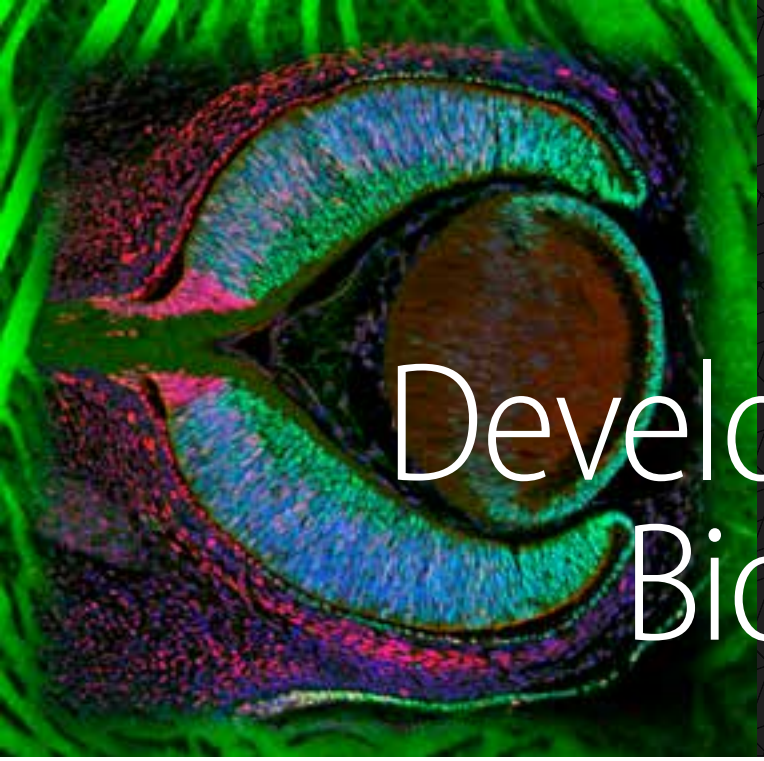
Dr. Lior Mayo, Ph.D.
Research Hub Director

Events in 2018

April 26 Symposium in honor of Prof. Nechama Kosower

Dec 23 Reciprocal Regulation of the Neuro-Immune Axis in Health and Disease

Website: https://en-med.tau.ac.il/biomed_tau/inflammation



Developmental Biology

Developmental Biology and Stem Cell Research – Molecular and cellular processes controlling tissue differentiation and organ development during embryo development and the relevance of diseases.

HUB EVENTS
The Developmental Biology Research Hub, launched in 2018 with an introductory breakfast meeting and 2 other events, brought together a range of attendees from across TAU campus

ATTRACT INTERNATIONAL SPEAKERS
Three guest speakers came from the USA and China

THE FUTURE
Plans are already underway for the next symposium in Summer 2019

Prof. Ruth Ashery-Padan Ph.D.

Dr. Chen Luxenberg

Dr. Limor Landsman

Hub co-directors

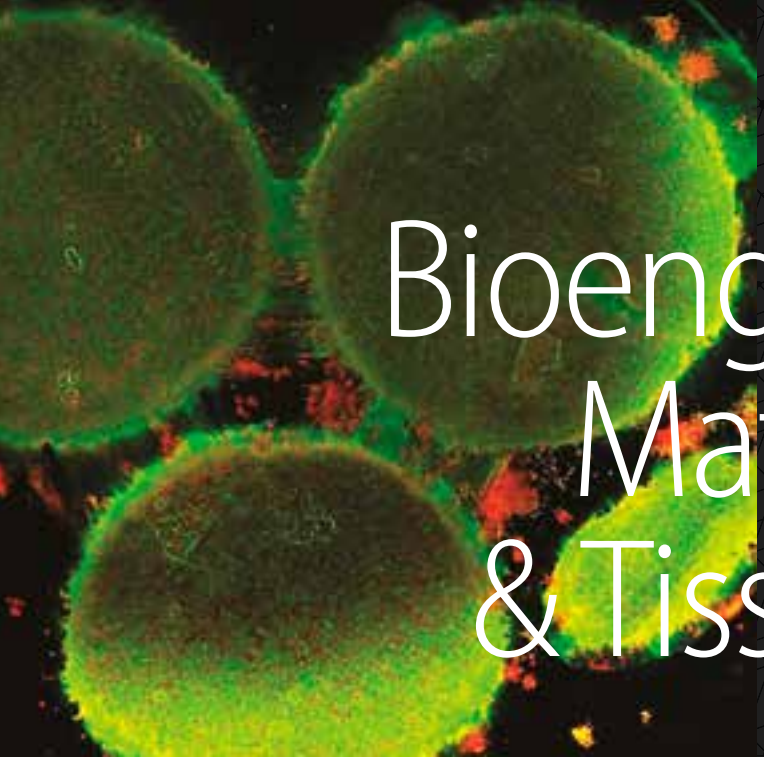
Events in 2018

Oct 29 Initiating the Developmental Biology Research Hub

Nov 25 Developmental Biology Seminar Series

Dec 9 Non-visual Photoreceptors, Circadian Clock and Embryonic Development

Website: https://en-med.tau.ac.il/biomed_tau_developmentalbiology



Bioengineering Materials, Cells & Tissues

This hub brings together the community of people at TAU and TAU-affiliated hospitals working within the field of developing and engineering materials, cells and tissues. The aim is to build an interactive community and to energize research of those working with these components.

EVENTS
The Bioengineering Materials, Cells & Tissues Research Hub launched in 2018 and hosted an introductory breakfast meeting

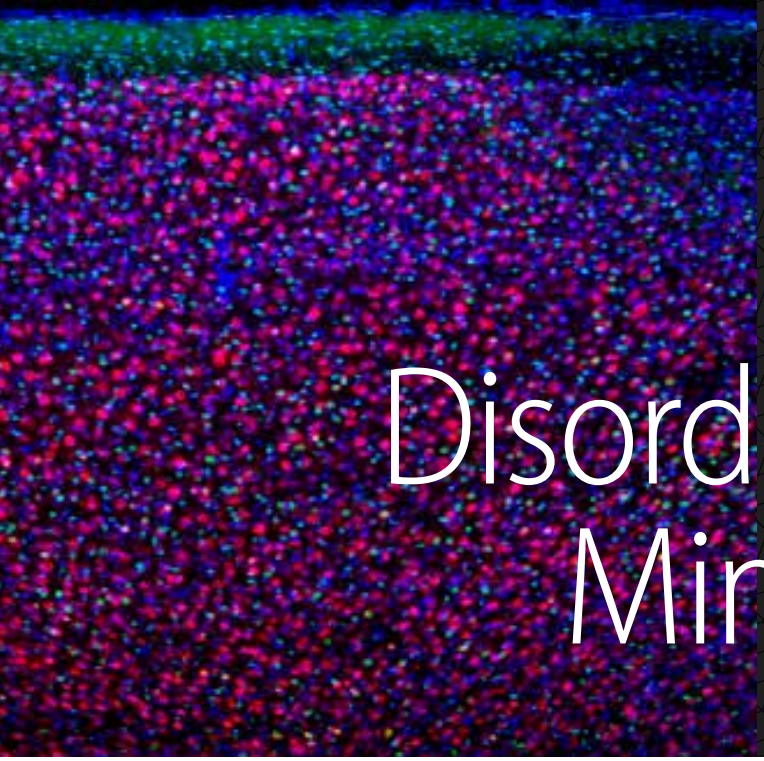
INCREASE VISIBILITY
The hub is planning its first symposium in the spring of 2019

Events in 2018

Oct 22 Introductory Breakfast Meeting

Dr. Ben Maoz
Research Hub director

Website: https://en-med.tau.ac.il/biomed_tau/engineering



Disorders of the Mind & Brain

Disorders of the Mind & Brain is focused on understanding the pathophysiological mechanisms of disorders involved in the brain and mind and ways to better diagnose and treat such disorders.

EVENTS
The Disorders of the Mind & Brain Research Hub launched in 2018 with a seminar

INTERNATIONAL SPEAKERS
The hub hosted an international guest from China

THE FUTURE
Two events are planned for 2019

Events in 2018

Dec 10 The Promise of Pluripotent Stem Cells in the Therapy of Alzheimer's Disease

Dr. Avi Ashkenazi

Dr. Boaz Barak

Hub directors

Website: https://en-med.tau.ac.il/biomed_tau/minddisorders

Hubs coming in 2019

Microbiomes in Health & Disease

Prof. Elhanan Borenstein
Research Hub Director

Gene Therapy and Genome Editing

Dr. Adi Barzel
Research Hub Director

Other **events**

January 30 and February 27 Interdisciplinary Colloquium in Medicine & Humanities

April 25 PrePost-Doctoral PhD Meetup

November 20 International Graduate Student Meet Up

TEL AVIV UNIVERSITY אוניברסיטת תל אביב

BioMed@TAU

Some of MEET THE NEW TAU FACULTY

Thursday, November 22, 2018 from 9:00-13:00

Porter School of Environmental Studies, Auditorium 013B

9:00– Coffee | **9:30**– Introductions by Prof. Klafter, President of TAU, and Prof. Henis, VP for Research & Development, TAU | **9:45**—10 minute presentations by new faculty members of Medicine, Life Sciences, Exact Sciences | **12:30**– Light lunch

Liad Mudrik

" The empirical study of consciousness: what we study and what we want to study"

- School of Psychological Sciences, Faculty of Sciences
- Sagol School of Neuroscience

Website

9:45 -->

Isaac Sasson

"The social reshaping of uncertainty in length of life"

- Dept. of Sociology and Anthropology, Faculty of Humanities

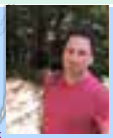
Website

Boaz Barak

" Elucidating neurobiological mechanisms responsible for behavioral alterations in neurogenic syndromes"

Website

- Sagol School of Neuroscience
- School of Psychological Sciences,



Yaron Carmi

"Why our immune system does not generate an effective response against cancer?"

- Dept. of Pathology, Faculty of Medicine

Website

Shlomi Reuveni

"In search of universality"

- School of Chemistry, Faculty of Exact Sciences

Website

10:30 -->

Amit Birenboim

"Towards a personalized health geography"

Website

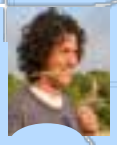
- Dept. of Geography and Human Environment, Faculty of Exact Sciences

Meroz Yasmine

Physics of plant behavior"

- School of Plant Science and Food Security, Faculty of Life Sciences

Website



Eran Levin

"Nutritional ecology– the truth is out there"

Website

- School of Zoology, Faculty of Life Sciences

Mark Shein-Idelson

"A dragons view on the evolution of brain states"

- Dept. of Neurobiology, Faculty of Life Sciences

Website

11:15 -->

Ronen Zaidel-Bar

"What can a worm teach us about human development and disease"

- Dept. Of Cell & Developmental Biology, Faculty of Medicine

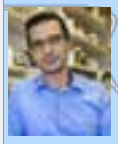
Website

Ben Maoz

"Organs-on-a-chip: a new tool for the study of human physiology"

Website

- Dept. of Biomedical Engineering, Faculty of Engineering
- Sagol School of Neuroscience



Dor Salomon

"World war VI: bacterial warfare and deadly arsenals"

- Dept. of Human Microbiology & Immunology, Faculty of Medicine

Website

11:45 -->

Natalia Freund

"The magic bullet for combating infectious diseases: isolation of monoclonal antibodies directly from patients"

Website

- Dept. of Microbiology and Immunology, Faculty of Medicine

Adi Barzel

"Genome editing with and without CRISPR"

- Dept. of Biochemistry & Molecular Biology, Faculty of Life Sciences

Website

Ido Tavor

"Relating brain function and structure: from brain connectivity to brain activity"

Website

- Sagol School of Neuroscience
- Dept. of Anatomy and Anthropology, Faculty of Medicine

November 22 Meet Some of the New TAU Faculty

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