DECEMBER 2020

The Maurice and Gabriela Goldschleger School of Dental Medicine

Founded by the Alpha Omega International Fraternity

Newsletter

The Maurice and Gabriela Goldschleger School of Dental Medicine
Sackler Faculty of Medicine
Tel Aviv University

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MESSAGE FROM THE HEAD OF SCHOOL

Prof. Shlomo Matalon

In spite of the stormy times of COVID 19, the Tel Aviv School of Dental Medicine has maintained its activity as a teaching institute and a dental care supplier for the Israeli population.

During the onset of the pandemic and the first lockdown in March 2020 our students volunteered to deliver food and elementary supplies to low income families and lonely elderly people who could not reach their grocery stores and pharmacies.

In addition, the Tel Aviv School of Dental Medicine was the only institution in the Tel Aviv area to provide dental emergency services during the first lockdown. The School also supported the Tel Aviv Medical Center Intensive Care Unit by lending its ventilators to the hospital.

Through these troubled times teaching our undergraduate as well as postgraduate students continued with the required adaptations.

Lectures are delivered via Zoom, separating walls were installed to divide the space of the clinic's floor, and in compliance with the Ministry of Health regulations, students were grouped in capsules to allow for social distancing.

In spite of all these apparent difficulties, last month our graduates successfully passed the Israeli Board Examinations.

Research activity within the School has never stopped. On the contrary, it continued with full power. Dr. Lihi Adler Abramovich, one of our researchers, won the prestigious European Research Council Grant of 1.5 Million Euros for the Multifunctional Personalized Self-Assembled Biomaterials for Bone Regeneration project.

Another research project led by Dr. Alona Emodi, Prof. Ilana Eli and Dr. Nir Uziel on Temporomandibular Disorders and Bruxism Outbreak as a Possible Factor of Orofacial Pain Worsening during the COVID-19P pandemic—Concomitant Research in Two Countries, attracted a lot of interest, nationally and internationally.

A new periodontal research lab has been opened, dedicated to basic research of the hard and soft tissues in the periodontal apparatus and dental implants. One of the main research topics in this new facility is wound healing, for which different cell culture protocols and animal models are applied. Tissue engineering techniques for gingiva-derived mesenchymal and epithelial stem cells are used to investigate bone regeneration and treatment of cutaneous wounds. Our lab also evaluates the different interactions, at cell and molecular level, of periodontal cells and tissues with different biomaterials used for tissue regeneration in periodontology and implant dentistry.

The revision of the undergraduate DMD program is on its way, designed to comply with future plans for inaugurating an international DMD program in the School. The first stage in this revision will be implemented as early as the next academic year.

A new Master's Degree in Dentistry (MSc) was accredited by the University. The program will be held in English for national and international students.

To our already successful international post graduate program in orthodontics, additional international post graduate programs are also planned in endodontics and periodontology. The postgraduate studies will enable the residents to concomitantly receive MSc/PhD degrees. This will create the ground for generations of science-oriented clinicians who will be able to lead high-quality research. The programs will contribute to the School's income as well as increase its professional prestige worldwide.

An increase in the number of students required the installation of 16 new simulation units. The simulation lab is due to be ready in days.

The 35-year-old dental units at the Students Clinics are gradually being replaced. This year 26 out of 100 units have already been replaced by state of the art new ones. Additional funding sources have to be made available in order to complete the desperately needed replacement of all the remaining old dental units.

The new Imaging Dental Centre has been renovated and equipped with a new CBCT donated by the AO London. Having an "in house" CBCT unit allows us to provide practical experience in training programs for pre- and post-graduate students as well as for our staff. The internally generated database allows us to continue our future research in the application of "special artificial intelligence" based on in-depth learning in the field of maxillofacial radiology. Several new clinics have been added within the department of oral pathology, oral medicine and maxillofacial imaging, offering both a service to the patient population and a training opportunity for the oral medicine residents. These include a specialized service for oncology patients, to plan and execute all required dental care prior to oral cancer treatment, as well as addressing special needs during and following cancer therapy which tend to have very serious implications on oral cavity and jaws. A low-level LASER biomodulation service has been introduced, a new modality which has

an important role both in treatment of mucosal side –effects of cancer treatment as well as in different types of oral and maxillofacial pain. A new clinic focusing on quantitative testing and treatment of smell and taste disturbances has recently been opened. It will be involved in evaluating post-Corona effects on smell and taste, as well as serve patients with non-Corona - related disturbances. With these new additions, we hope to provide the best training for our residents, which, when they graduate, will in time provide state of the art service to the Israeli population.

The oral pathology laboratory, which is the only specialized lab and training facility for oral pathology in Israel, is awaiting a major renovation project. The entire floor requires new division of the work spaces to separate specialized work areas, as well as total refurbishing, to accommodate an increase in the number of residents as well as researchers and MSc/PhD students using our facility. In addition, new and up to date equipment is planned to be purchased to allow the laboratory to keep up with the scientific advances. For this purpose, a sum of 190,000 Canadian Dollars has been raised in a campaign of Canadian friends of TAU. However, this is only about half of the actual cost of the renovation project, so we are making efforts to raise the remaining funding.

On this occasion I would like to thank our friends for their continuous support in spite of these stormy times: Alpha Omega, IDA, Colgate, DIVIDent, Tag Dental, Ditron, OSADA Israel, G.C Israel and N. Reutman.

The coming years are going to be challenging and interesting. A lot has been done and a lot is still awaiting us.

I look forward to the future with anticipation, hope and optimism.

I have seen the School going through turbulent times and I know for sure that with the collaboration and support of my colleagues, fraters, and friends our beloved School will conquer new heights.

OPENING TO THE COMMUNITY

Rectification

Naftali Greenberg, fourth year student.

As part of the battle against the Corona virus I joined the molecular lab of the Mayanei Yeshua hospital in Bnei Barak. I carry out the entire process in my work, from receipt of a Corona sample to submission of the results to the treating staff. The work grants me an amazing sense of mission. The knowledge I gained for my BSc degree helped me to quickly integrate in the work at the lab, where we work with the most advanced technological systems which we learned in various courses.

working in the Corona Laboratory

Naftali Grreenberg , a fourth-year student working at the Corona Laboratory

Teaching is a real challenge in the Covid19 period

Teaching was and still is a real challenge at all campuses during the Covid19 period; however, teaching at the Dental School was much more difficult to conduct, compared to all other university disciplines. The reason is simple: manual dexterities cannot be acquired through Zoom without guided training in the Dental School. This is the reason that the Ministry of Health allowed us to continue the treatment of patients in the student's clinics as well as the training in the simulation labs (Phantom Lab) also in this difficult period. The conditions set by the Ministry of Health (purple character) were very stringent and expensive to follow, but we followed them very strictly. In the clinics the students were divided into capsules with transparent dividers between the dental units. The senior students were given priority, in order to allow them to finish the requirements and be prepared for the Ministry of Health exam. The junior students were compensated in the following year. Indeed, a few problems occurred when students reported about family members positive to Covid19, which necessitated insulation of all the students in the capsule for two weeks, but we overcame all these incidents, and the majority of the students finished the requirements, and all of them successfully passed the Ministry of Health exam.

The only period in which the teaching completely stopped was the first lock down. In this period we established a first aid clinic to help our patients, who were in urgent need of dental treatment. The first aid clinic was managed by Dr. Eran Dolev and by volunteers from the academic staff and the students, and was very successful. The students were very confused during that period and what helped them a lot was a weekly update letter from Prof. Matalon, the Head of the School and Prof. Pilo, the Head of the Teaching Committee.

The theoretical part was taught online through the Unicko and later Zoom software, both synchronic and asynchronic. Most of the staff were not prepared for online teaching, but surprisingly they overcame these difficulties very fast, and the feedbacks from the students were mostly very satisfactory. Through tutorials organized by the virtual TAU staff, the teachers in the Dental School improved their online teaching capabilities significantly and found this new way of teaching even contributory. Indeed, teaching online only, without physical presence in the class is not ideal, but still manageable. We expect that when we will return to full teaching at the campus after overcoming the Covid19, we will continue to teach partly through the online way we discovered in this period. So, not everything was bad in this period.

Corona times in the Department of Oral Pathology, Oral Medicine and Maxillofacial Imaging

A new academic year is about to begin, and it is time to reflect on the challenging year that has just passed.

A lockdown period of 6-7 weeks brought the entire country, as well as our dental school to a complete stand still. Following a very short period of re-evaluation and re-organization, teaching of the dental students and our residents in oral pathology and oral medicine resumed on–line.

We as school, invested a great effort to ensure that this period will not be completely lost for our students and residents, and provided them with as much training and teaching as was possible in these very unusual circumstances, stretching long into the evening and night hours.

The oral pathology service worked throughout the lockdown for emergency cases from the community. Already at the end of April, the oral medicine and first aid clinics resumed their activity, under strict Covid-19 regulation, with all the protective gear required to keep both patients and us safe.

The clinic provided diagnostic and treatment services for patients with different oral conditions, including pre-malignant conditions and varying systemic diseases. In fact, the Dental School and what we considered essential services in our department, were the only activity on campus during this time. Most of the school's activity resumed in June with full protective gear and strictly following regulations, although this new routine is not an easy task.

We are grateful that all of our faculty, staff and residents are safe.

Residents in oral medicine working in the clinics

New head of the Department of Oral Pathology, Oral Medicine and Maxillofacial Imaging

The former Head of our Department, Prof. Marilena Vered, is stepping down on October 1st and will be replaced by Prof. Ilana Kaplan.

The vision will be a continuation of the principles that guided the Department in the past: “Excellence in teaching, Excellence in Research, and Excellence in Service to the Community”.

Part of this will be accomplished by the campaign of the Canadian Friends of Tel Aviv University to raise funds for the renovation and upgrade of the laboratory of oral pathology – the only facility in Israel with a training program in oral Pathology. The campaign is led by Mrs. Ruth Remer, a friend of the Department, who was also responsible for funding the acquisition of a state-of-the-art microscope 2 years ago. This renovation is awaited for with much anticipation!

Prof. Ilana Kaplan, the new Head of Department, at the new microscope in the Laboratory of Oral Pathology

One of the residents in Oral Pathology taking an internal test

Admission test to the Dental School, July 2020

Prosthetics Course, Studying at Schoolyard

Ceramic Coloring Course

Israeli Researchers Find Significant Rise in Orofacial & Jaw Pain During Pandemic

A new study from the Goldschleger School of Dental Medicine at Tel Aviv University's Sackler Faculty of Medicine has found that during Israel's first lockdown the general population exhibited a considerable rise in orofacial pain, as well as jaw-clenching in the daytime and teeth-grinding at night – physical symptoms often caused by stress and anxiety.

The study was led by Tel Aviv University's Dr. Alona Emodi-Perlman and Prof. Ilana Eli of the School of Dental Medicine, in collaboration with Dr. Nir Uziel and Dr. Efrat, and with researchers from the University of Wroclaw in Poland, who examined the Polish population's reaction to the pandemic. The paper was published in the October 2020 edition of the Journal of Clinical Medicine.

Dr. Emodi-Perlman and Prof. Eli specialize in facial and jaw pain, with emphasis on TMD (Temporo-Mandibular Disorders) – chronic pain in the facial muscles and jaw joints, as well as Bruxism – excessive teeth-grinding and/or jaw-clenching, which can significantly damage the teeth and jaw joints. These syndromes are known to be greatly impacted by emotional factors such as stress and anxiety.

Accordingly, the researchers chose to study the presence and possible worsening of these symptoms in the general population during the first COVID-19 lockdown, due to the national emergency and rise in anxiety levels. The research questionnaire was answered by a total of 1,800 respondents in Israel and Poland. In Israel, a significant rise was found in all symptoms, compared to data from studies conducted before the pandemic:

"Our study, conducted during the first lockdown of the COVID-19 pandemic, found a significant rise in the symptoms of jaw and facial pain, jaw-clenching and teeth-grinding – well-known manifestations of anxiety and emotional distress."

- In Israel's general population: The prevalence of TMD symptoms rose from about 35% in the past to 47% (increase of 12%) during the pandemic; the prevalence of jaw-clenching in the daytime rose from about 17% to 32% (increase of 15%); and teeth-grinding at night rose from about 10% to 36% (increase of 25%). Altogether a rise of 10%-25% was recorded in these symptoms, which often reflect emotional stress. People who had suffered from these symptoms before the pandemic exhibited a rise of about 15% in their severity.
- The researchers found a high correlation between the symptoms on the one hand and gender and anxiety level on the other: Women suffer from these symptoms much more than men, and people with high levels of anxiety tend to develop them more than those with lower anxiety levels.
- Dividing the respondents into age-groups also generated interesting results, with the middle group (35-55) reporting a much greater rise in symptoms compared to the younger (18-34) and older (56 and over) groups. At the bottom line, the group that suffered most from the symptoms during the first lockdown were women aged 35-55: 48% suffered from TMD, 46% clenched their jaws in the daytime, and about 50% ground their teeth at night.

In addition, comparing findings in Israel to results in Poland, the researchers found that probability of TMD and Bruxism was much higher among respondents in Poland.

The researchers concluded: "Our study, conducted during the first lockdown of the COVID-19 pandemic, found a significant rise in the symptoms of jaw and facial pain, jaw-clenching and teeth-grinding – well-known manifestations of anxiety and emotional distress.

"We found that women are more likely than men to suffer from these symptoms, and that the 35-55 age group suffered more than the younger (18-34) and older (56 and over) groups. We believe that our findings reflect the distress felt by the middle generation, who were cooped up at home with young children, without the usual help from grandparents, while also worrying about their elderly parents, facing financial problems and often required to work from home under trying conditions."

Teeth-Telling

Dr. Rachel Sarig

In her archeological research Dr. Sarig discovered that there were considerably less dental problems in ancient populations. “The ancient man’s teeth were definitely healthier. In pre-historical jaws the teeth are neatly arranged in a bow, there are no problems of lack of teeth or density whereas with us, the modern population, most children will require straightening of the teeth and quite a few will need wisdom tooth extractions.”

How do you explain this?

Modern medicine strives to find an answer to the question “how does the process unfold?” whereas evolutionary medicine asks “why did it happen? Why do we see a large group of people or children who suffer from the same phenomenon? Today we know that the environmental and nutritional conditions are totally different from what existed in the pre-historical era. Today children eat soft and processed food that does not require an effort from the muscles and teeth. Unlike the food eaten in the pre-historical periods, which was hard and unprocessed, such as grilled meat, roots and uncooked food. Our food consists of soft food such as delicacies and meatballs. The children even ask us to cut the “hard parts” of bread. This change in the environment and nutrition causes a reduction in size of our jaw, and in the end is also reflected in lack of space for teeth and leads to the need for orthodontic treatment.”

Pre-historical chewing system

Dr. Sarig is an orthodontist, a specialist and researcher at the School of Dental Medicine and the Dan David Center for Research of Human History at the Faculty of Medicine at Tel Aviv University.

Her doctorate is in anatomy and anthropology, where she researched the erosion mechanisms in the chewing system and examined the forces at work on the tooth in the modern jaw during the course of a lifetime. In the framework of her research she went over the last 200 years with the help of 4,000 skulls.

Dr. Sarig set up the first and only laboratory at the Dental School in the line of dental anthropology, that deals with the evolution of mankind via research of the chewing system, muscles and teeth. She is one of the few researchers in the world who engage both in research of the ancient and the modern man and also engages in orthodontic treatment at her clinic in Petah Tikva:

“The change in nutrition, caused by the agricultural revolution 11,000 years ago, has had a physiological effect on the body structure and this change continues to occur.”

“The combination of research and clinic makes it possible to take a broad look at phenomena with which we deal at present. This unique combination allows for a better understanding of processes we face today and therefore helps to plan and provide better treatment for our patients at the clinic.”

In the framework of one of her latest research projects six human teeth found in the Manot cave in Western Galilee were researched. Dr. Sarig and her colleagues determined that they belong to modern man and the neanderthal man. The teeth provide the first anthropological proof of the modern man’s belonging to the neanderthal man. The teeth bear the first anthropological witness to the population of humans who emigrated from Europe to Israel 40,000 years ago. “This finding is extremely important for the identification of inhabitants of the area tens of thousands of years ago”, explains Dr. Sarig. “The teeth are of utmost importance for up to now we had no human remains of that period in Israel, and there is a significant gap of time in our knowledge. In this way our research provides another point in time in the evolutionary and cultural sequence, another piece of information in the huge puzzle called the history of mankind.”

Sarig gets excited every time she comes upon a prehistorical finding: “I am engaged in research since 2005 and I work together with other archeologists and researchers. I often go out to archeological excavation sites. We take the findings discovered at excavations to the lab in order to research and analyze them. Although I have already researched tens of findings I get excited again each time.”

Prehistoric people with perfect teeth

Teeth are better preserved than bones for they are made of enamel, the most resilient material in the body. More importantly: the structure and form of the tooth has a strong genetic component which makes it possible to relate it to a specific population.

Dr. Sarig is well aware of the fact that had she lived in the past she would have been unemployed. “The pre-historic people did not need dentists. The further we

progress in time and observe modern populations, we see that disorders and diseases increase. Today in my clinic I

see cases of trapped teeth, lack of teeth, density of teeth, and that causes me to think why this is so."

According to Sarig the agricultural revolution is responsible for the dramatic deterioration that occurred in the situation of our teeth. "One of the major changes caused by the agricultural revolution 11,000 years ago is the change in nutrition: the ability to cook, produce utensils, control the availability of food. From a population of hunters and gatherers depending on the year's seasons and scattering of animals we have turned into people who control their food. This is a change that has had a physiological effect on the body structure and this change continues to occur. I deal with teeth and jaws, but similar phenomena may be observed in other organs as well, such as back pain connected with the way we sit and work, or problems of the wrist as the result of use of the computer mouse."

For example?

In the pre-historic population a great deal of force was used on the teeth and jaws. Not only because the food was hard and unprocessed, but also because the teeth were used for the preparation of various utensils. We see that there are signs on the teeth that indicate, for example, that the teeth were used for spinning of fishing nets, or skin processing. These actions resulted in the use of increased force and affected the structure of the jaw and teeth. Even at present this cultural change affects us."

"One of the most common examples is the crowding of the teeth. Over 70% of people will need straightening of the teeth. In some cases surgical intervention is required or extraction. You wonder "why does the majority of the population require treatment and what does this mean for the future? From the clinical point of view reduction in the size of the jaw which causes teeth failing to erupt or even stopping to erupt should be considered. Are we in fact in the midst of a process in which we are losing our teeth? We avoid extracting teeth, but should we consider if we really need all our teeth? These changes cannot be examined immediately but require a broad perspective that will make it possible to identify and understand the process that is taking place. That is the beauty in the combination of research and clinic."

SPOT ON SCHOOL'S RESEARCH LABORATORIES

Dr. Daniel Bar

Molecular Biology of Aging

Advances in biomedical science have cured multiple diseases and greatly improved healthspan and lifespan. However, aging is the strongest risk factor for most causes of death in the western world, and thus these advances have resulted in a relatively small increase in maximal lifespan. Without a systematic approach to understand and treat the aging process, it is unlikely that the phenomenal improvement in healthspan and lifespan seen over the last 100 years will continue. In light of these views, we aim to contribute to the understanding of the aging process and its modulation.

In our lab, we aim to develop new methods and use them to answer questions related to aging. Recently, members of the lab have developed a novel approach to determine the local protein environment near targets of interest in human samples. We are using this method to explore the composition of the nuclear envelope directly from different human tissues. This method can accurately quantify nuclear envelope composition, and monitor how that changes with age in mouse and human tissues. Our lab is using this unique method to comprehensively explore how the proteome of specific subcellular structures changes with age. In parallel, we use proximity-labeling method to unravel disease mechanisms. Another ongoing project in our lab is the development of an alternative method to ChIP-seq for mapping DNA protein binding sites. We are already able to detect protein binding event on long single molecules and now developing and implementing this method, leveraging it to answer open questions about the biology of aging."

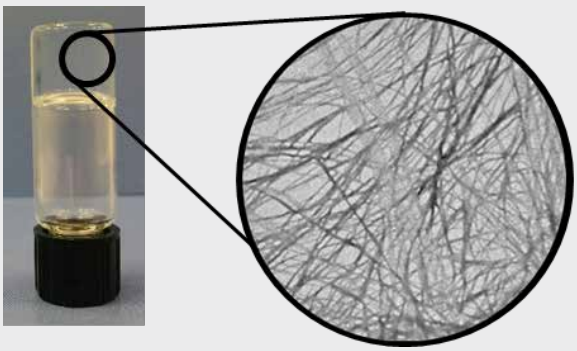
https://barlabtau.wixsite.com/website/about

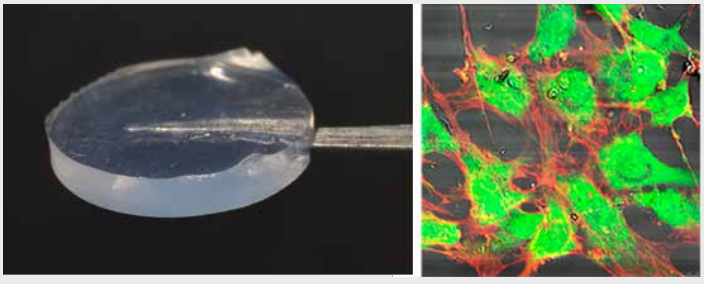
Dr. Lihi Adler-Abramovich
Senior Lecturer, Department of Oral Biology, School of Dental Medicine, Sackler Faculty of Medicine.

Laboratory of Bioinspired Materials

Research in my Laboratory of Bioinspired Materials is focused on mimicking self-assembly processes that occur in nature, including biomineralization and the organization of short peptides and amino acids into ordered nanostructures. We are a material science laboratory with emphasize on organic chemistry and medical-biological applications. The group is developing new organic materials that are used for various applications, such as 3D hydrogels for bone tissue regeneration, which exhibit extraordinary mechanical properties and durability, along with biocompatibility and controlled drugs release. A central technique is the formation of hybrid hydrogels, using two or more different building blocks, resulting in a 3D hydrogel with novel and diverse properties that can be easily fine-tuned. In addition, the laboratory is interested in antimicrobial activity of nanostructures for coatings and incorporation into composite materials for dental medicine application.

Lab Website: https://lihi13.wixsite.com/lihi





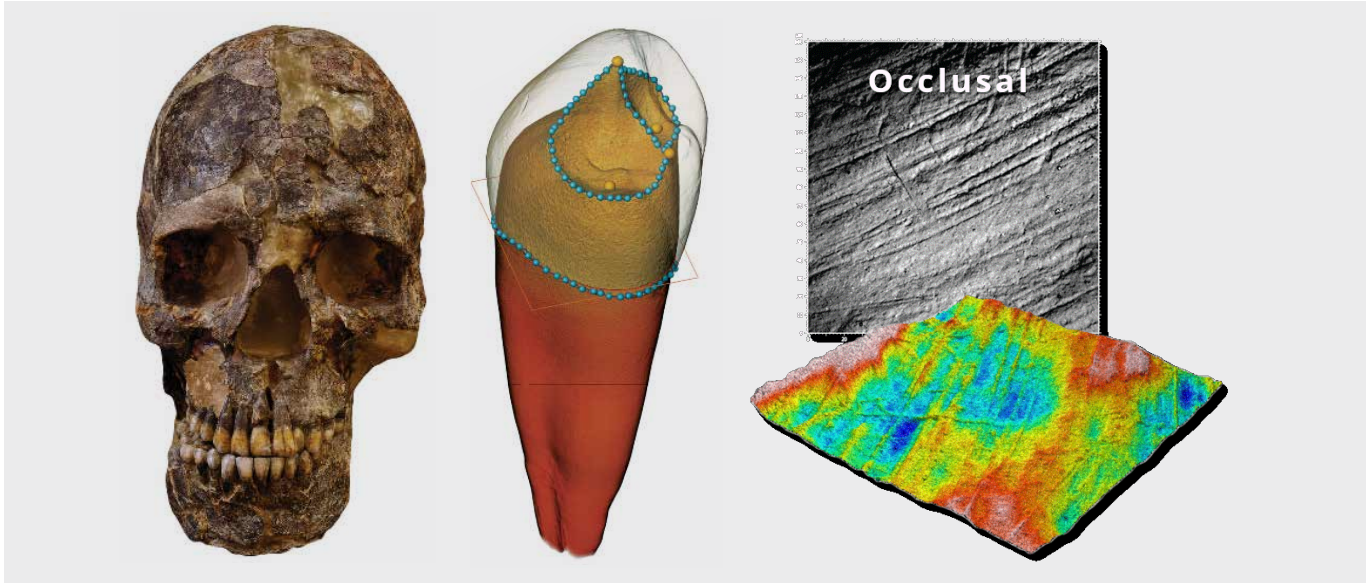
Dr. Rachel Sarig
Senior Lecturer, Department of Oral Biology, School of Dental Medicine, Sackler Faculty of Medicine.
Dan David Center for Human Evolution and Biohistory Research. ddc.tau.ac.il
Shmunis Family Antrhopology Institute. sfai.tau.ac.il

Dental Anthropology Laboratory

Understanding who we are and where we come from can shed a light on our future. Many of the current oral diseases and malformations have their roots in our evolutionary history. Knowing the evolutionary processes that led to the current shape and size of our skull and mandible may greatly bear on our understanding of phenomena such as malocclusions (i.e., crowding, rotation, overbite), dental malformations (i.e., impaction, missing and supernumerary teeth) and oral diseases (caries, attrition, periodontal diseases). Treatment strategy should take into consideration evolutionary reasoning involved in shaping our face and jaws, ignoring them may end, in the long run, in treatments' failure. The laboratory is also affiliated with the Dan David Center for Human Evolution and Bio-history Research at the Steinhardt Museum of Natural History which curates one of the world's largest anthropological collection.

The group's main interest is the investigation of dental anthropology, dental biomechanics and the masticatory system. The study of the masticatory apparatus is conducted both in prehistoric and modern societies using laboratory models, microCT scans and clinical studies. The Sarig group is composed of professional dentists and scientists specialized in different fields of dental medicine and anthropology.

Lab Website: lab.ydweb.co.il



Prof. Tamar Brosh, PhD
Head of the Department of Oral Biology

An engineer and in charge of the Dental Biomechanics Laboratory

My research includes determination of the mechanical properties of dental materials as well as the mechanical behavior of dental structures. These are done in the lab by in vivo and in vitro experiments involving mechanical measurements. I have collaborations with the clinical departments of TAU Dental School as well as other professions such as orthopedic surgeons. In addition, I collaborate with the occupational therapy department where we developed a modified reliable dexterity test for characterizing the manual dexterities of dental students that were the basis of developing training tools for improving students' capabilities quickly and efficiently.

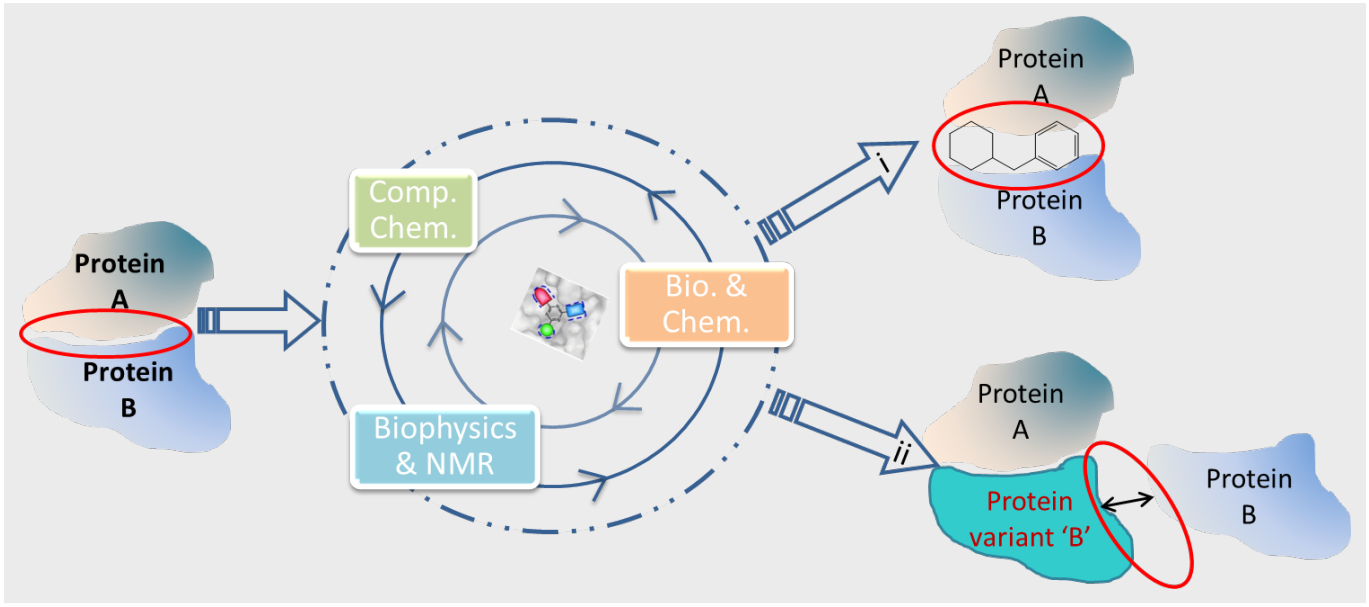
https://en-med.tau.ac.il/profile/tbrosh

Maayan Gal, PhD

Drug-discovery and protein engineering lab

Dr. Maayan Gal is a faculty member in the Department of Oral Biology, School of Dental Medicine at the Sackler Faculty of Medicine. His lab focuses on the challenging biological space of **protein-protein interactions (PPIs)**. Through the integration of protein engineering, biophysical and computational tools he aims is to decipher the structure-function relation of PPIs focusing on immune related protein complexes and to develop new protein modulators as the basis for promising therapeutics. Dr. Maayan Gal is also the co-founder of a new incubator company.

https://maayaangaal.wixsite.com/galma/contact-me



PPI discovery based on the integration of computational and biophysical tools

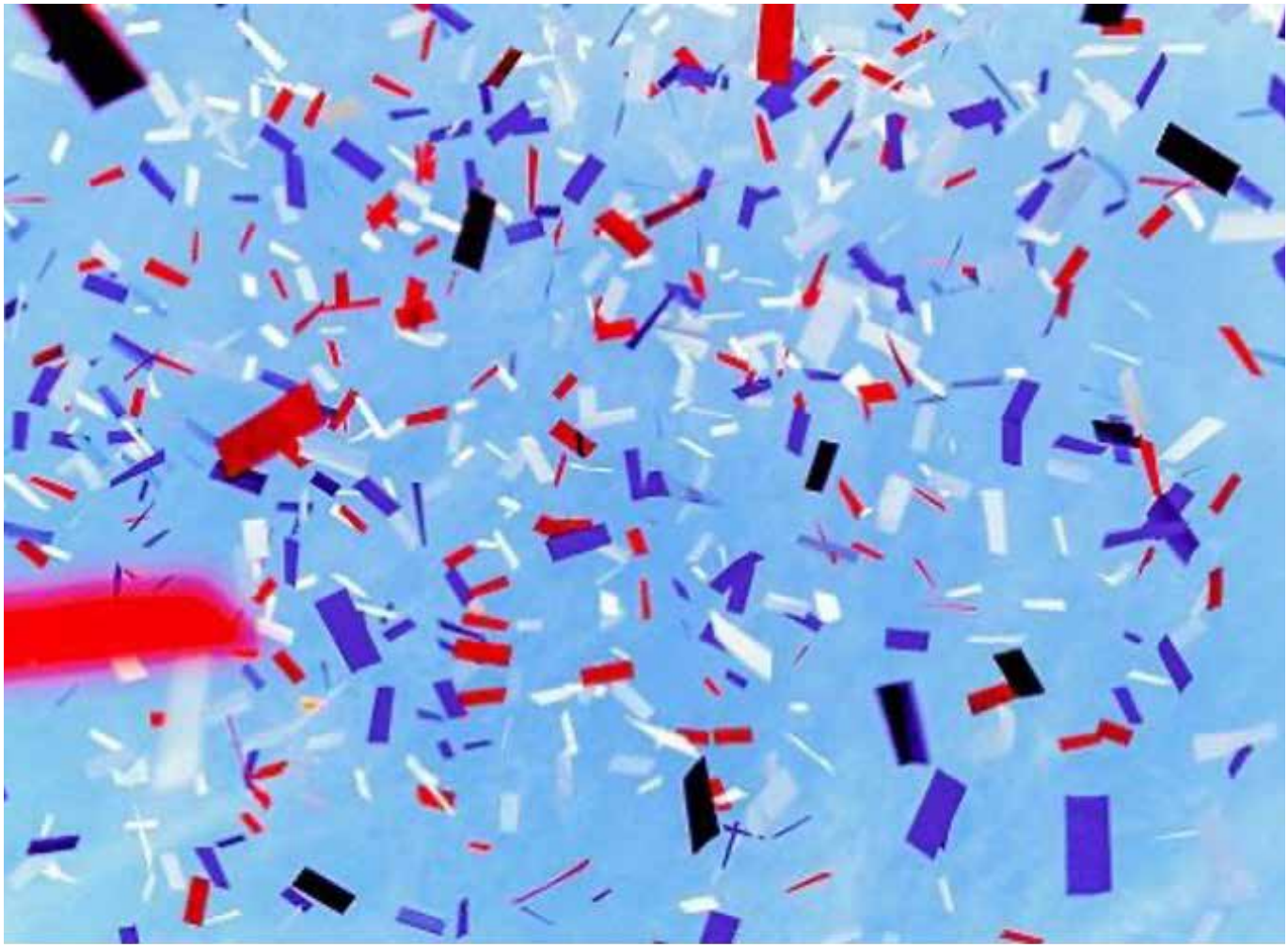
Congratulations to our Sackler Faculty member on this achievement

Dr. Lihi Adler-Abramovich
Department of Oral Biology, The Goldschleger School of Dental Medicine Sackler Faculty of Medicine, Tel Aviv University, ISRAEL

Lihi Adler-Abramovich is a Principal Investigator and head of the Laboratory of Bioinspired Materials at Tel Aviv University (TAU). Dr. Adler-Abramovich joined the School of Dental Medicine in the Faculty of Medicine in 2015 as a Senior Lecturer, affiliated with the Tel Aviv University Center for Nanoscience and Nanotechnology. Lihi studied biology at Tel Aviv University and received both her M.Sc. (summa cum laude) and her Ph.D. (2010). Lihi received several prizes including the Colton Foundation Scholarship and the Marian Gertner Institute for Medical Nanosystems Scholarship. Lihi is the author of over 80 publications including publications in Nature Nanotechnology, Nature Chemical Biology, Nature Communications, Nano Letters, Science Advances and ACS Nano.

In the ERC project- Personal Bone, the Adler-Abramovich group will study multifunctional personalized self-assembled biomaterials for bone Regeneration. Bone regeneration is a critical challenge in the treatment of fractures, bone loss due to tumor resection, and alveolar bone deficiencies. Currently, approximately 2.2 million bone graft procedures are performed annually worldwide. Despite significant progress in bone tissue engineering, there is an unmet need for patient-specific long-lasting bone restoration. Personal Bone aims to develop customized supramolecular scaffolds that will promote personalized therapy for bone regenerative medicine, thus significantly advancing the fields of tissue engineering and materials science while offering a novel solution to a major healthcare issue.

The funding, worth in total €677 million, will help these early-career scientists and scholars to build their own teams and conduct pioneering research across all disciplines. The grants are part of the EU's Research and Innovation programmer, Horizon 2020.



30 UNDER 30

The groundbreaking young people who are changing the world

Dr. Shiran Sudari

Oral cavity cancer is one of the most common cancers and despite much advances in treatment and research methods, still leads to high mortality rates. Dr. Shiran Sudari is currently working on developing a new diagnostic method – accurate and non-invasive – to identify tumors in the oral cavity. Nowadays oral cavity cancer is detected in late stages, so patients' chances of survival are very low, says Sudari.

The method is designed to identify the disease and tumors in early stages in order to improve the survival of the patients. The method developed by Sudari, under the guidance of Prof. Avi Hirschberg of Tel Aviv University and Prof. Fickler of Bar Ilan University, is based on the injection of nano-gold particles coated with antibodies that bind directly to the tumor cells. After the injection a simple laser scan provides a clear picture of where the particles are situated at the very level of the cell.

Sudari's ambition is to eventually replace the existing biopsy-taking method, which is invasive and violent. The answer is obtained by a telling method and is accepted on the spot, so that the patients' period of waiting and the need for a pathologist's diagnosis is saved.

Another study by Sudari dealt with bone building in patients with aggressive periodontal disease that attacks young people up to the age of 30. She published an article about this work and won outstanding dissertation work for 2019.

Sudari spent her military service in unit 8200, and after her service she was integrated into development and research in the high-tech world. This career did not last long and Sodri began her dental studies and then a master's degree in medical sciences at Tel Aviv University.

Today, alongside her work as a researcher, she began a specialization in oral and jaw surgery at the Baruch Pade Medical Center in Poria, where she treats trauma cases, head and neck tumors, facial pain and more.

Currently, the research is being conducted in animal tests and Sudari believes that in the coming years the product will become finished and will be available to doctors in hospitals in Israel and abroad. "Later on I would like to develop the product that will allow to identify even metastases to the neck area".

Outstanding Rector In Teaching

From left to right: Prof. Tamar Brosh, Prof Shlomo Matalon, Head of School and Dr. Peri Raz

Academic Promotion

Dr.Gil Shimshon Slutzkey was promoted to the rank of Lecturer in Periodontology.

Dr. Roni Kolerman was promoted to the rank of Senior Lecturer in Periodontology

Prof. Noam Yarom was promoted to the rank of Clinical Associate Professor in Oral Medicine

Dr. Tatiana Sella Tunis was promoted to the rank of Lecturer in Orthodontics

Dr. Omer Cohen was promoted to the rank of Lecturer in Periodontology

Outstanding Workers

This year, due to the corona virus the ceremony of awarding certificates of excellence to the administrative staff took place at Zoom. Unfortunately, all other ceremonies that you are all used to get a glimmer of each year were held in zoom format. Lets hope that by next year we can provide the same old pictures we used to print.

The selected employees for this year were:

Yosef Marsh

Meirav Eliyhau

Karmit Maoz

New Heads of Departments

Prof. Ilana Kaplan

Prof. Ilana Kaplan graduated from the School of Dental Medicine at Tel Aviv University in 1982, followed by training in the post- graduate program in oral pathology and graduated in 1995. She has served as Head of the oral pathology services at the Rabin Medical Center since 1996, and from 2009-2020 as Head of oral pathology services at Tel Aviv Sourasky Medical Center.

During this period she also worked in the schools of medicine and dental medicine at Tel Aviv University, teaching pathology and oral pathology to students and residents. Continuous work in research in the fields of oral pathology resulted in over 100 scientific publications, and international recognition.

Since October 2020 Prof Kaplan has served as Head the Department of Oral Pathology, Oral Medicine and Oral and Maxillofacial Imaging .

Prof. Joseph Nissan D.M.D.

Head, Professor, Department of Oral -Rehabilitation, The Maurice and Gabriela Goldschleger School of Dental Medicine, Tel Aviv University, Tel Aviv, Israel

Prof. Nissan is also the Head of Oral Rehabilitation and Implant-Prosthodontics, At Rabin Medical Center, Beilinson Campus, Petah Tikva.

Prof. Nissan received his DMD (1991) and Prosthodontics (1997) degrees, from Tel Aviv University School of Dental Medicine.

He is a member of the Prosthodontics Department (since 1991), over the years Prof. Nissan has served as department coordinator (2002-4) . He also served as director of facultative committees such as : School Board Directory , Research committee, Continuing Education committee, Education committee, Postgraduate education committee, Dental equipment and materials committee.

Prof. Nissan is currently President of the “Israel Society of Implant-Dentistry”, former President of the” Israel Prosthodontic Society”, former Chairman of the “National board of Prosthodontics Professional Committee” of the Israel Dental Association and Israel Ministry of Health(2012-2020). Prof. Nissan serves as an Editorial Board Member and an International-reviewer for some of the leading international professional Journals in the fields of prosthodontics and dental implants.

Prof. Nissan has published about 100 articles in the international professional literature, he is also the editor of 1 book and 8 book chapters in prosthodontics and he is involved in research, mainly in fixed prosthodontics, implant dentistry and aesthetic dentistry. Prof. Nissan also serves as FDI- World Dental Federation, International- lecturer. He has been lecturing extensively both nationally and internationally in the fields of implant -prosthodontics, and fixed prosthodontics.

Prof. Raphael Pilo

During the past 35+ years Prof. Pilo was fully committed to research. It began in his undergraduate studies at the Sackler School of Medicine. During that period he spent two years in research at the Biochemistry Research Laboratories; The G.S. Wise Center for Life Sciences (1980-1981). He earned his DMD degree at the Goldschleger School of Dental Medicine in1985. Due to Excellency in his DMD studies he was immediately recruited to the staff of the Dental School as Instructor in the Department of Oral Rehabilitation (1984). From then after he was in charge of teaching dental materials and technologies to all undergraduate and postgraduate students. Recently he earned the Rector’s prize for excellence in teaching (senior academic staff)(2016). Following his studies at the school of Dental Medicine he also earned a PhD degree from the Sackler School of Medicine (2001-2006). After awarding the PhD degree he spent a year in research during his sabbatical at the department of oral rehabilitation, the Hebrew University (2008-2009). In 1989 he established the Laboratory for Precise Measurements, School of Dental Medicine and was in charge of the laboratory. For many years he served as a member of the Committee for Teachers and Students Affairs, as a member of the Committee for DMD Thesis and as a member of the Committee for Research and the Committee for MSc degree in Basic Sciences in Dentistry. Undoubtedly the peak of his commitment to the Dental School and Faculty was his membership in the Teaching Committee,

which is the most important committee of the Dental School. He served as a member of that committee during 2003-2010 and as the head of that committee, starting from 2010 until nowadays. For the last 10 years through his leadership and in cooperation with the School of Medicine, extensive changes have been made in the curriculum, adapting the Dental School to the leading dental schools in the world. Contents of dental medicine were added, beginning with the first academic year while other common courses were adapted to the dental students. The teaching transformed to be entire digital, in line with the best schools in the world. Chief milestones are: digital filing and radiography, intra-oral scanners, CAD-CAM dentistry and treatment of patients in couples (student as a dentist-student as assistant). Starting from October 2017 and in line with the rest of the university the curriculum was switched to semesters instead of trimesters, necessitating entire re-planning. Nowadays, after several years of planning, a new plan for the 6 years program was approved, starting from 2021. For his excellency in research in 2008 he was awarded "Fellow of the Academy of Dental Materials". This honor is bestowed on selected academic and industry researchers who have made a significant contribution in the field of dental/biological materials science. This achievement was also reflected in a prize received in 2010 from the Israeli Society of Oral Rehabilitation entitled "Member of Honor". To date Prof. Pilo has published an overall of 93 original peer reviewed scientific papers, 8 case reports and 17 review articles. His research involves multiple research methodologies, including inspective and analytical microscopy and spectroscopy for meticulous surface and interface analyses, assessing 3-D morphology, structure (phase distribution) and elemental composition and distribution as well as all aspects of macro and micro interface mechanical properties. In October 2020 he was elected as the Head of the Department of Oral Biology, with the aim of upgrading the research level of the l Dental School.

Prof. Carlos Nemcovsky

Graduated from Dental School in Montevideo, Uruguay in 1979. Post-graduate studies in Periodontology at Tel Aviv University. Specialist in Periodontology since 1997.

Full Professor and Head of the Department of Periodontology and Dental Implantology, The Maurice and Gabriela Goldschleger School of Dental Medicine, Tel Aviv University.

Author or co-author of over 100 scientific publications (Pubmed. org) in the leading international journals. H-index (scopus. com): 33. RG score (researchgate.net): 38.14.

Author of numerous book chapters. Co-editor of books: "Evidence-Based Decision Making in Dentistry. Multidisciplinary Management of the Natural Dentition" Springer International Publishing Switzerland 2017 and "Endodontic-Periodontal Lesions. Evidence-Based Multidisciplinary Clinical Management" Springer International Publishing Switzerland 2019. Guest Editor. Special Issue "Characterization and Behavior of Dental, Oral and Maxillo-Facial Reconstructive Materials" in Materials (section Biomaterials). https://www.mdpi.com/journal/materials/special_issues/dental_oral_maxillo_facial_materials

Recipient of grant and prize for best research study in diabetes: Changes in the Expression profile of pro- and anti-inflammatory genes around resorbable collagen membranes caused by diabetes in rats. Hendrik and Irene Gutwirth Research Fund in Diabetes Mellitus of the Tel Aviv University Faculty of Medicine.

Recipient of grant Antimicrobial Nano-Functionalization of Peptide-enriched Silk Fibroin matrices to prevent bone infections and to enhance implant osseointegration in orthopaedics and dentistry. European Innovative Research & Technological Development Projects in Nanomedicine.

Prof. Igor Tsesis

Dr. Igor Tsesis received his DMD from Moscow State University of Medicine and Dentistry, Russia, in 1990 and in 2003 graduated cum laude from the Post-Graduate Endodontic Program at the Dental School of Tel Aviv University, Israel. He is currently Associate professor and serves as Director of Graduate Endodontics in Tel Aviv University. Dr. Tsesis is past-president of the Israeli Endodontic Society and a member of the Scientific Council of the Israeli Dental Association. He is also a member of the Scientific Advisory Board of the Journal of Endodontics and the International Editorial Board of the journal Italian Oral Surgery. Dr. Tsesis is editor of the Springer book Complications in Endodontic Surgery (2014) and co-editor of the Springer books Vertical Root Fractures in Dentistry (2015), Evidence-Based Decision Making in Dentistry (2017) and Endodontic-Periodontal Lesions (2020). His research concerns the diagnosis and treatment of complications following root canal therapy and endodontic surgery. Most of his research has been published in the leading endodontic journals.

Prof. Gabi Chaushu, DMD, MSc

Head, Professor, Department of Oral & Maxillofacial Surgery, The Maurice and Gabriela Goldschleger School of Dental Medicine, Tel Aviv University, Tel Aviv, Israel. Head, Department of Oral & Maxillofacial Surgery Rabin Medical Center, Beilinson Campus, Petah Tikva, Israel.

Attended the Hebrew University at Jerusalem. Completed residency training in Oral & Maxillofacial Surgery at the Chaim Sheba Medical Center, Tel Hashomer, Israel. Head, Department of Oral & Maxillofacial Surgery, Rabin Medical Center, Beilinson Campus, Petah Tikva, Israel 2011-now.

Member of the Israeli Board of Oral & Maxillofacial Surgery. Past president of the Israeli Association of Oral & Maxillofacial Surgery. Member of the Israeli Scientific Council of the Israeli Dental Association.

Head of Oral & Maxillofacial Surgery unit at the Tel Aviv Medical Center 2002-2006. Head of Oral Health and Dental Implantology Center at the Assaf Harofeh Medical Center 2008-2011.

Has published over 150 articles in the English literature. Author of chapters in books. Has lectured extensively internationally. Conducted many courses in the field of implant dentistry. Editor and reviewer for numerous journals worldwide. His fields of research include implant dentistry, immediate implant placement, bone grafting, sinus augmentation, block grafting, postoperative morbidity, salivary glands, and oral pathology.

Retirees

Recently, several faculty members, and members of the School's administrative staff, have retired after years of productive and fruitful work.

We all thanks for your devotion and contribution to our School and wish you many more years of health and happiness!

Prof. Abraham Hirshberg

Prof Benjamin Peretz

Prof Ervin Weiss, Former Head of School

Prof. Miron Weinreb

Hana Vered

Culture this year: a gathering for exhibition

This year we celebrated the artistic side of the Dental School teachers and Administrative staff.
Participants: Prof. Beni Pertz | Prof. Haim tal | Marina Gavrielov | Rebeca Ben Ezra | Hagar Itzhaki | Yael Senior

Professor Myron Lieberman

Professor Myron Lieberman was a diminutive man with immense presence. His life choices speak directly to the character of this rare individual. From serving in the United States Armed Forces, to making Aliya at the peak of his professional success in the U.S.

Myron studied Orthodontics directly from a student of the Master (EH Angle), Professor Alan Brodie. Upon which he embarked on a career that included private practice and the joining of the Orthodontic faculty at the University of Pennsylvania. His accomplishments there prompted a "request" to come to the young State of Israel for 1 year to build an orthodontic department from scratch. In yet another testament to his character, Myron built a new future in Israel which included chairing the Orthodontic Department at Tel Aviv University for 25 years. Professor Lieberman has overseen the post-graduate education of more than 250 orthodontists, each of which admires, respects and carries with them his profound influence. This project continued to develop further into an international Erasmus-based curriculum program with a global student base under his successors together with his ceaseless contributions which have placed him at the head of the orthodontic community in Israel.

The Zionist fervor that resolved him to remain in Israel was also expressed in charitable acts such as his and Debbie's work with ESRA, procuring funds to support the dental health needs of under-privileged children and promotion of the dental school for the purpose of philanthropic contributions.

Our sages taught us that "a nation's treasure is its scholars", and if this is so then Professor Lieberman has increased our wealth many times over. The truth of Myron Lieberman's character was indeed expressed through the choice of his actions.

Founded by **Alpha Omega International** Dental Fraternity

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