



Rambam on Call

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RUTH RAPPAPORT CHILDREN'S HOSPITAL

June 2008. In Israel today as in ancient times, the barley and wheat harvest is upon us. The bouquet of early summer rises from bale-strewn stubble fields, permeating the country's farms and adjacent towns and city outskirts. On hot, dry days, if you close your eyes when anywhere near these fields, you can almost smell bread baking.

The *Book of Ruth*, read in synagogue on Shavuot (the Festival of Weeks), recalls the grain harvest in ancient Israel and celebrates the Biblical Ruth, a great-grandmother of King David and a resilient person in her own right, whose name means *compassionate friend*.

Rambam Health Care Campus is fortunate to count among our compassionate friends our very own Ruth – Mrs. Bruce Rappaport – and her husband and family.

During the Second Lebanon War of two summers ago, when the city of Haifa and our medical center were under heavy bombardment by the Hezbollah in Lebanon, Ruth and Bruce Rappaport telephoned Prof. Rafael Beyar, Director General of RHCC, and asked how they could help.

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FOR THE LOVE OF CHILDREN

"My sincere hope for the hospital bearing my name is that it will care for all the children of the State of Israel without religious, ethnic or gender bias, that the day will come when peace will prevail in our region, and that the parents of our neighbors' children will seek for them efficient medical care here."

- Ruth Rappaport (pictured with husband Bruce, daughter Irith, and granddaughter Shiri)

PROFESSOR RAFAEL BEYAR GREETES RAMBAM'S 70TH



It moves me to greet our friends on the State of Israel's 60th anniversary and Rambam's 70th anniversary.

Our formerly British hospital became an Israeli government hospital in 1948 with the State's founding. In that year, the children of Kibbutz Gesher took refuge here in wartime. They received warmth, security, a playground and an education. They ran through the corridors and sought adventures, just as today we seek adventures in the lab.

"Here at Rambam we integrate science, love of humankind and curiosity. These are also the country's foundations and will give Israel direction for the future."

Rambam became linked to the Technion's Rappaport Faculty of Medicine in 1979, and this is what we had sought – a university affiliation and the donors to make such growth possible. In 2004, Israel's first Nobel Laureates, Profs. Aaron Ciechanover and Avram Hershko, came from this campus. A simple laboratory, brilliant thinking and creativity – this is what brought the Nobels.

In 2006, the Second Lebanon War taught us the need for an underground emergency hospital and fortified above-ground structures, and to our good fortune, Rambam's friends in Israel and abroad are committed to helping us reach these goals as well. We are most grateful. ●



The British Mandate over Palestine was drawing to a close, and the Arab armies were preparing to invade.

Located in an isolated spot beside the Jordan River, the kibbutz, home to 80 adults and 50 children ages 0-5, and the neighboring Arab villages focused

their hopes and fears on a nearby British police fortress built in 1943 to control a strategic Jordan River crossing. Who would take the stronghold when the British left?

On April 27th, the tense watchers saw equipment-filled trucks leaving the fortress. At 5 p.m., the Union Jack was quickly lowered and the British fled. Jewish farmers came running from



the kibbutz fields toward the compound from one direction while Arab villagers and Jordanian Legionnaires came running from the other.

As night fell and the struggle for the fortress escalated, the kibbutz plucked its 50 youngsters from sleep and dropped them out the back window of the children's house ➤ cont. p2

INTERVIEW: PROFESSOR KARL SKORECKI

DIRECTOR, MEDICAL AND RESEARCH DEVELOPMENT, RAMBAM HEALTH CARE CAMPUS

Director, Rappaport Family Institute for Research in the Medical Sciences, Technion-Israel Institute of Technology
Annie Chutick Professor and Chair in Medicine (Nephrology), Rappaport Faculty of Medicine, Technion-Israel Institute of Technology



Q You are a medical doctor, molecular geneticist, chaired professor, and Director of Medical and Research Development at Rambam Health Care Campus and of the Technion's Rappaport Research Institute. Which comes first?

A First and foremost, before all of these, is to try to be a *mensch*. Without this, the professional and academic activities will not work. At the professional level, my primary vocation is a physician. I'm a nephrologist – a kidney specialist – and I love that because the kidneys are an intelligent organ; they selectively clean the body of unwanted and surplus products and have an elegant architectural and functional layout. Unfortunately, however, people do suffer kidney disease.

Q What attracted you to nephrology?

A First, although kidney diseases are serious, life sustaining treatments are available – dialysis or transplantation. Secondly, the nephrologist also acts as the patient's primary healthcare provider because patients with kidney disease have symptoms in all their organs. This enables nephrologists to cultivate and sustain a special and longstanding interaction with their patients and compels nephrologists to maintain a broad mastery of general medical knowledge.

Q What do you mean by the kidneys' being elegant?

A There are two levels of elegance. Level 1 is the exquisite architectural structure of each functional unit, or nephron, of the kidney. There are 2 million of these nephrons, 1 million in each kidney. What is stunning is that each nephron is composed of 25 different, specialized cell types functioning as a symphony orchestra in harmony. Level 2 elegance is the architectural layout of the nephrons in relation to each other: they are tiled

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RUTH RAPPAPORT CHILDREN'S HOSPITAL CONTINUED FROM P1

That telephone call initiated a drive to build a 21st century children's hospital on the Rambam campus in answer to Northern Israel's obviously urgent need for improved conditions for sick children and their families.

P2

Construction of the 9-story, 15,000 square meter Ruth Rappaport Children's Hospital is due to commence on October 1, 2008. Of the new hospital's overall anticipated cost of \$36 million, \$18 million (50%) in matching funds has been pledged by the Rappaport Family Foundation. An additional \$18 million is sought. ●

RAMBAM AT 70 REUNION CONTINUED FROM P1

into a cramped bomb shelter, whose makeshift walls were constructed of trees reinforced by sand packed between two sheets of tin. The noise of explosives and the screams of the wounded reached the children underground. With every concussive blast, dust clouds and the mixed smells of urine and scorched earth filled the shelter.

On April 28th, Gesher determined to evacuate its youngsters to safety under cover of darkness. Because the three supply buses intended for this mission arrived with wounded drivers in burnt and bullet-riddled vehicles, the children were instead escorted on a dangerous, utterly silent 5-kilometer trek through rain-soaked mud and across thorns and thistles. One child, who had hidden his shoes inside the shelter wall, couldn't find them in the dark and made the trek barefooted. The children were given sanctuary at Rambam in an abandoned 19th century French monastery adjacent to the hospital and lived there for 22 months, cared for by a rotating team of mothers.

On April 28, 2008, the grown children of Gesher were reunited at Rambam. Amos Amitai – the brave little boy who had lost his shoes and walked barefooted through mud and thorns in self-restrained silence, and who grew up to become a vigorous kibbutz elder, father of four and grandfather of nine – took Spencer Auditorium's stage to share the children's collective memories of this place: *"For us children, it was fantastic. Our fathers weren't there, sometimes our mothers weren't there, and everything was permitted. We played hide-and-seek in the monastery, would climb on the roof to sing vulgar songs at passersby and escape through the cellar if anyone chased us, and played a game of trying to glimpse the hidden faces of the nuns in the neighborhood whenever they went outside to collect milk, vegetables, bread and kerosene from horse-drawn carts. We sampled pine nuts from the trees and, one day, decided to eat from the castor-oil tree and got such bad stomachaches that all of us were sent to Rambam Hospital. In the summer, it was fun every day and all day – we went to the [historic] Casino in Bat Galim and to the sea. It was a children's kingdom, and I'm sure that even today not all the people at Rambam are aware of all the hiding places."* ●

Rambam *on Call*

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INTERVIEW: PROFESSOR KARL SKORECKI CONTINUED FROM P1

into each other, and each nephron knows what its neighbor is doing and works based on what its neighbor is doing. It knows if it should be absorbing or secreting more sodium or water, for example. That's also true for potassium, protein metabolism products and a whole host of other ingredients. The juxtaposition of the nephrons in the kidney allows a person to survive at one extreme in the dry conditions of the desert, where the main challenge would be to excrete as little water as possible, and at the other extreme in a plentiful, humid environment while drinking lots of fluid. A million of these nephrons have to be exactly stacked and juxtaposed, and if the structure isn't perfect, the kidney doesn't fulfill its function.

Q Where does molecular genetics come into the picture?

A In order to understand almost anything in medicine today, it's important to understand something about genetics. For example, kidney disease is related to hypertension, and hypertension is heritable; the genes that are related to salt retention don't function properly, so you can treat the kidney problem by handling the salt problem. From clinical practice and teaching, you move into the research arena, and once you start learning about genetic principles, it's addicting. Say you're looking for a gene that's involved in a certain kidney disease – by serendipity, you may find genes affecting other organ systems.

Now what happened was that I became interested in not only the individual patient, which is the prime focus of course, but also in populations – in two related research areas called *population health* and *population genetics*. There are certain disease predispositions that are more common in certain populations – chronic kidney disease in African populations, for example, or Gaucher's disease and certain forms of cancer in the Ashkenazi Jewish population.

It's also the case that in order to conduct disease-related research appropriately, and in order to offer genetic counseling appropriately, it's important to unravel the population genetic structure. This has led us – researchers and many brilliant students in at least 20 research groups around the world – to study the variation in DNA sequences among peoples, mostly with this medical justification in mind, but it turns out that just like archeology, linguistics, and archival records, studying DNA is a tool for understanding history.

Q For example?

A [Counts off on his fingers] **1** – we have demonstrated that the Druze population of northern Israel and neighboring countries represents a "snapshot" of the diverse population genetic architecture of the Near East in antiquity, antedating by many thousands of years the faith's founding revelation in 1017 CE; **2** – we are able to show in the DNA markers on the Y chromosome – the male father-to-son chromosome – that, consistent with Jewish oral and Biblical tradition, the majority of modern-day male Jewish priests [Kohanim] are descended from a single common male ancestor; **3** – working with colleagues in the United Kingdom, we have been able to verify the unwritten, oral tradition of a far-flung tribe living in Northern South Africa and Zimbabwe, the Lemba, who claim that their male ancestors emanate from the ancient kingdom of Judea, [and] while historians have scoffed at that claim, DNA evidence has proved it to be correct; **4** – my same team at Rambam that developed an experimental model using stem cells to advance cancer research and test anti-cancer therapies has discovered that 40% of Ashkenazi Jews are descended from four founding mothers who lived in the Rhine Valley in Europe 1,000 years ago.

Obviously, people are interested in these historical insights, but for me as a physician what is really important are the medical implications, and the key term here is barcode – I'm using it as a metaphor but it's creeping into medical jargon. These 4 vignettes that I've given you are all based on analyzing genetic markers, which constitute a barcode for shared maternal or paternal ancestry.

Q And if I – or you, as my physician – know my barcode, how does that help?

A Just as there are barcodes for shared ancestry, so too, throughout the genome, there are barcodes for disease predispositions or drug response. They answer the question of why person A has an excellent response to a certain treatment and person B has side effects.

Our current challenge is to identify these barcodes that predispose an individual to a certain disease, and then to prevent the person from getting the disease – not in an empirical or trial and error way but rather by using the DNA barcode to pick the most appropriate treatment for that person. This is called *pharmacogenomics* – the popular name is *personalized medicine* – and that's really where we're headed.

Q Won't personalized medicine be prohibitively expensive?

A It makes medicine *less* costly. Nothing is more costly than suffering and misery, certainly in terms of human pain and misery, but also in dollar terms. It's almost a paradox: DNA, computers, tests – it doesn't sound personal, it sounds technological, so I think it's important to emphasize that it doesn't replace the individual physician-patient relationship. A DNA sample will be taken from a blood test or a saliva test, the patient will come with the results to the physician, and management plans will be made. The physician will say, "We think that in your particular case, drugs x, y and z won't work so let's go directly to drugs d and e."

Q What is the rationale for a Medical and Research Development program at Rambam?

A For the past two years, we have had a very specific plan for the development of a hospital-based research institute at Rambam. I already direct the Technion's Rappaport Institute on campus, and in the past, healthcare physicians at Rambam have carried out their research there, in the Faculty of Medicine, but the research agenda in a university faculty and the research agenda in a hospital, though highly interactive and complementary, are somewhat different. At Rambam, we have a cohort of physicians whose research is more appropriately done at the patient's bedside – for example, investigations into imaging technology or interventional device technology, whereas in a faculty of medicine it would be basic cell or molecular biology, biochemistry, immunology.

Q How long ago and from where did you immigrate to Israel, and why did you choose Rambam Health Care Campus as your professional home?

A My wife Linda and our children and I moved to Israel from Toronto, Canada twelve years ago out of a societal, historical and religious imperative. Professionally, what is attractive is this very powerful and synergistic interaction between Rambam as a hospital and the Technion and its Faculty of Medicine as a university. As importantly, Rambam is a microcosm of what Haifa is – the least polarized cosmopolitan city, metropolis and region in the Near East along secular-religious and Jewish-Arab-Druze-Bahai and other ethnic lines; I find that to be very attractive, and Rambam is the epitome of that. ●



RUTH RAPPAPORT CHILDREN'S HOSPITAL DONORS' VISION

To their vision for the Ruth Rappaport Children's Hospital, the Rappaport family has brought deep, respectful insights into the needs of youngsters and parents. They have called for a building whose design:

- Places the child and parents at the center of a holistic healing process
- Facilitates a return to family medicine's emphasis on the personal relationship between doctor and patient
- Is colorful and emphasizes comfort and serenity
- Balances youngsters' needs for both privacy and access to the outside world, recognizing the contribution of both to children's cognitive, emotional and social development
- Relates to the hospital environment as inseparable from both the surrounding community and the hospital's natural setting – in Rambam's case, the adjacent Mediterranean Sea with its capacity for soothing and healing the soul

In planning the new Ruth Rappaport Children's Hospital, Tel-Aviv based, internationally accomplished architect Arad Sharon is fortunate to have found in RHCC'S leadership and the Rappaport family generous patrons appreciative of his artistry.

He has translated the donors' vision for the new hospital into the language of contemporary structural design and added his personal love for the world of theater. The building he has planned is intended, he says, to be playful but not infantile and to appeal to children's intuition and spontaneity.

The new hospital will be approached from the southeast through healing gardens. From this angle, its aluminum-cladded, glass-curtained façade is meant to suggest a simple, white box (perhaps even a toy box) whose sheer front will partially reveal the activities within. Three exposed pillars – painted or clad in red, green and blue to suggest the children's game of jackstraws – will rise 7 flights to support the building's cantilevered uppermost 2 floors, which will close the top of the box like an overhanging lid.

RUTH RAPPAPORT CHILDREN'S HOSPITAL ARCHITECT'S VISION

"All architects I have known, in good times or bad, have felt like that – waiting forever for a generous, loving client who will let them become the elated artists they were born to be."

– Kurt Vonnegut, Jr.*

The architect says that he is particularly intrigued by a hospital's potential for mediating the conceptual and physical relationship between private and public experiences, and thus has planned an interior meant to contain, in his words, "three grades of activities and intimacies," working outward from the privacy of the rooms to the semi-privacy of wards and corridors and thence to open, communal spaces.

The hospital's 120 inpatient beds will be distributed among approximately 60 double-occupancy (and some single-occupancy) rooms, each with a divider for privacy's sake. Parents will be provided with a wall bed, generous storage space, and a computerized work station so that they may stay in touch with their places of employment while keeping vigil over their children.

All rooms will provide a maximum view of the sea. Moreover, each hospital floor will be color coded and decorated to express a particular theme from nature; the names when translated into English – e.g., the blue "Ocean Floor" and green "Forest Floor" – evoke fairy tales where children make brave, magical journeys of self-discovery through worlds hidden from adult perception.

The architect suggests that one way of understanding the building's use of interior space is to imagine an avocado whose pit has been removed. Wards and rooms will rise in tiers along the sides and back of the interior while the empty center will be filled with 2 atriums, one on top of the other.

The ground floor of the 3-story-high lower atrium will contain a lobby, children's science museum, auditorium for cinema and lectures, internet café, and shops.

The 4-story-high upper atrium's piazza will be paved in large red and white squares to suggest a



game board for checkers or chess, a design inspired by the Renaissance-era outdoor piazza of Marostica, Italy. The hospital piazza is intended to provide young outpatients with an open expanse for free play, offer pedestrian traffic a sociable alternative to using the corridors, and serve as a stage for public performances. Some rooms will jut out above the piazza like theater boxes, whose tops will provide open balconies for the rooms above them. All such rooms will feature acoustically insulating shutters for those patients who desire privacy or quiet.

The upper atrium's ceiling will provide the foundation for the 7th floor Hemato-Oncology Department, which will, in the architect's words, "close the avocado." This department represents a special design challenge because youngsters undergoing bone marrow transplantation, blood transfusions and chemotherapy have compromised immune systems. The floor will feature a central patio with real trees, whose beauty will also be accessible to view from the building's top-floor Child Development Center. ●

* "Sleeping Beauty," *Architectural Digest: A Literary Collection* (2007): 85.

RAMBAM EXPERT DIAGNOSES AFGHANI GIRL WITH RARE DISEASE

P4 Prof. Amos Etzioni, Director of Meyer Children's Hospital at Rambam, recently received an urgent request from an American doctor at the American Hospital in Kabul, Afghanistan on behalf of a sick girl.

The doctor, stumped by the child's unusual symptoms but suspecting leukocyte adherence deficiency (LAD), turned to Prof. Etzioni, the world's leading expert on this disease, for his diagnosis.

LAD is an extremely rare genetic disease that prevents the body's white blood cells from leaving the blood vessels in order to do their job of defending the body against infection. It currently affects several hundred patients worldwide, a small number of Israelis among them. Untreated children with LAD die at the age of 2 or 3; the disease's only cure is bone marrow transplantation.

The American doctor, who contacted Prof. Etzioni after having read several of his published articles on the subject, arranged for a sample of the girl's blood to be flown from Afghanistan to Israel via France. Within several hours, lab tests performed by Prof. Etzioni had confirmed the American doctor's hunch, a first step in saving the girl's life. ●

Amos Etzioni, M.D.
Director, Children's Hospital,
Rambam Health Care Campus
Professor of Pediatrics and Immunology,
Rappaport Faculty of Medicine



HAIFA HONORS PROF. ORA ISRAEL ON INTERNATIONAL WOMEN'S DAY



Prof. Ora Israel, Director of Research Operations and of the Department of Nuclear Medicine at Rambam Health Care Campus, was honored with a Certificate of Breakthrough Achievements by the Municipality of Haifa at an awards ceremony marking International Women's Day 2008. The event, held at Krieger Auditorium on the French Carmel, saluted a group of pioneering professional women living and working in Haifa whose accomplishments in the fields of industry, academic research performed at the Technion and the University of Haifa, and medicine have significantly contributed to the city and its people. Prof. Israel was recognized for her leading role in the development of hybrid imaging, which has brought about a transformation in methods used throughout the world for diagnosing and treating patients with cancer. ●

HIS BROTHER'S KEEPER



"Neither shalt thou stand idly by the blood of thy neighbor"
(Leviticus 19:16): a member of Haifa's Vizhnitz Hasidic community donates healthy platelets to save a stranger's life.

Sergey, 36, a Russian-born mechanical engineer from New York, reclines in bed in the Apheresis Unit at Rambam. He is hooked up to an imposing machine with dials, sensors, and tubes that feed their viscous red, pinkish and yellowish contents into suspended, plastic blood bags.

Sergey received word a week ago that his elder brother, who lives in Israel, had been diagnosed with leukemia and would receive chemotherapy followed by bone marrow transplantation (BMT), an aggressive strategy intended to replace a person's failed immune system. Sergey booked an urgent flight and came to Rambam to donate stem cells.

If you're thinking Bloodmobile with the juice and the cookies, think again.

First, a sample of Sergey's blood was type-tested for compatibility with his brother's blood. Luckily, the two men fell into the 25% category of siblings that match, although Sergey's brother will nevertheless receive high-dose immunosuppressant medication against graft-versus-host disease (GVHD).

Sergey spent the next five days injecting himself twice daily with Neupogen, a drug that increases the body's production of young stem cells in order to create a surplus for harvest.

"Do you remember the last time you had a serious flu?" Sergey asks rhetorically. "That's what [an excess of white-cell production in the bone marrow] feels like without the fever: aching bones and joints."

The machine to which Sergey is connected is an apheresis device. A large steel suction needle taped to his right arm draws out his blood, which passes through a centrifuge that separates blood into its component parts according to relative densities: yellowish plasma with suspended platelets (coagulants), young white cells (stem cells), mature white cells (immune system infection-fighters) and red cells (oxygenators).

A pump feeds anticoagulants into the centrifuge to keep the blood from clotting during collection.

"We are harvesting Sergey's young stem cells, the factory for all the blood cells," explains biochemist Dr. Lilach Bonstein, Deputy Director of the Blood Bank and Apheresis Unit at Rambam.

His brother won't require Sergey's red blood cells but, of course, Sergey does, so they're flowing from the centrifuge back into his body via a catheter taped to his left arm. On this warm day, Sergey has pulled a blanket up to his chest. A film of cold sweat glistens on his forehead. He's cold because his blood isn't being returned to him at body temperature.

Stem cell collection by apheresis takes six hours, and as it progresses, Sergey reports feeling better and better: "Imagine you've been taking medicine to increase your white cell counts and all of a sudden, they collect the surplus; it's like flying! But no matter how you feel physically during this procedure, it's irrelevant," he adds. "People do it for their family."

LIQUID GOLD

What if a BMT patient lacks a nearby or sufficiently large family, or no match among family members is found?

Dr. Bonstein explains that although red-cell and platelet units are available for purchase from Magen David Adom (MDA), BMT patients consume blood products, especially platelets, in huge quantities throughout their 1-2 month recuperation. Hospitals prefer apheresis single-donor platelet units whenever possible because one such unit equals 6-12 portions from MDA and goes easier on patients' compromised immune systems. "For us," she says, "single-donor units are like gold."

Whenever Dr. Bonstein needs platelets or other blood products on behalf of a patient with a small or far-away family or no family at all, she conveys the patient's blood type to the Seret Vizhnitz Hasidic Community (est. 1951), the largest Hasidic population in the North, which immediately sends over yeshiva students.

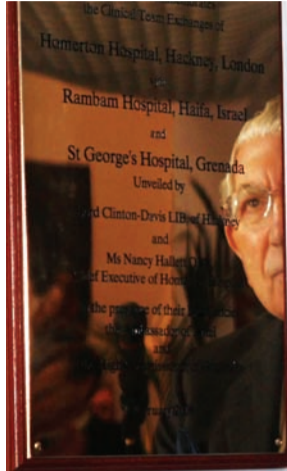
"They are willing to come whenever we need them," Dr. Bonstein says gratefully. "We use 1,000 units of single-donor platelets per year, and almost 10% comes from them." ●

TRIPLETS HOMERTON, ST GEORGE'S AND RAMBAM REUNITE

Their Excellencies Lord Stanley Clinton-Davis of the east London Borough of Hackney, Mr. Joseph Charter, Grenada's High Commissioner in London, and Mr. Ron Prosor, Ambassador of the State of Israel to the Court of St James, gathered in February in Hackney to celebrate a long-standing tradition of clinical exchange among three hospitals: Homerton University Hospital NHS, St George's Hospital and Rambam Health Care Campus.

Hackney has been twinned with the city of Haifa and the Caribbean island nation of

Grenada since 1968 and 1997 respectively. Homerton Hospital, which provides general hospital services to Hackney's 250,000 residents and to the City of London and specializes in fertility, fetal medicine, obstetrics and neonatology, keyhole surgery and neuro-rehabilitation, serves a large Jewish and Caribbean patient population. Since the 1990s, Homerton has participated in over half a dozen exchange visits in which teams of physicians from Homerton, Rambam and St George's have shadowed each other and shared expertise. ●



Lord Stanley Clinton-Davis unveils a plaque celebrating the friendship among Homerton University Hospital (UK), St George's Hospital (Grenada) and Rambam Health Care Campus (Israel).

RECENT RENOVATIONS

ORTHOPEDICS A&B COMPLETE REHAB

Liora, 44, recovering from surgery for a complicated leg fracture, is propped up in bed in Department of Orthopedics A, looking out the window at the RHCC helipad and, beyond that, at men fishing from the rocks and almond-shaped freighters riding an expanse of calm sea.

from the cleaners to the surgeon; the place is organized, pretty, and everything is managed as it should be."

The makeover benefiting Orthopedic Departments A and B took place in 2005, funded by British Friends of Rambam Medical Center and the Conference on Jewish Material Claims Against Germany.

"In the old Department [A], we had brown walls and linoleum floors, only 3 toilets and 2 showers for our entire 28 patients, and insufficient storage space," Deputy Nurse Larisa Hoz recalls.

Now, the department features a shower and toilet for every 3 patients; an on-site cast workshop, pharmacy and physiotherapy room; a well appointed nurses' station and surgeons' offices; and plenty of storage space. The – aesthetic! really! – pharmacy's shelves, drawers and glass doored refrigerator are neatly arranged and fully stocked



L to R: Dr. Alexander Lerner, Senior Orthopedist; Captain [Reserves] Dubie Ganish; Physiotherapist Mihiar Ghenaim; Lt. Asa-el Lubetzky. At Rambam in the immediate aftermath of the Second Lebanon War, Captain Ganish and Lt. Lubetzky learned to walk again.

with pill bottles, ampoules and intravenous-liquid sacs.

Larisa points out equipment designed to provide patients with relative independence of movement and to ease nurses' physical burden. The hydraulic beds feature a trapeze bar with a suspended triangle to enable patients to hoist themselves up. The corridor walls are fitted with railings. The shower and toilet doorways are extra wide for wheelchair access, and the wheelchairs slide easily over the toilet bowl.

Nurses on their rounds dispense medications from Salink Medicarts, mobile working stations equipped with sliding compartments to hold individual patients' dosages and with Wi-Fi enabled computers for reading doctors' orders and entering data.

Larisa says that in planning the renovation, the nursing staff insisted on not only function but also beauty. She points out, for example, the lovely backsplash and the mirror framed by decorative tiles above each bedroom's sink and countertop: "They wanted to give us white walls, plain walls, but Miri Foox – the Mother of the Department – and we said, 'No! It has to look like a hotel.'"

"We said, 'The white is too white – it's depressing; cream [color] will give warmth to the patients and staff and goes with Haifa's seaside.'"

Physiotherapist Mihiar Ghenaim adds, "I [also] sat with Miri [Foux], conveyed

exactly what I need for my patients, and my wish list was 100% fulfilled! Look – an electric bed for a patient who can't lie down or get up independently; a Sweden ladder; a stable walker to exercise the physiological process of walking. And we have very spacious equipment storage for crutches, exercise bands and an exercise ball, weights, CPM [continuous passive motion] for the elbow and shoulder, and so forth.

"The renovation has given me the opportunity to practice the profession exactly as I wish without limits, and it has given the patients all they need. Today, nothing lacks. We're living physiotherapy as it should be lived." ●



Deputy Nurse Larisa Hoz

She says, "The service here, the way people relate to me, it's really nice, the best." Her friend Ora adds, "I had heard that this department was terrible, but when I saw it, I said 'Wow!' Everything is colorful, clean, pretty and modern. Everything is new."

In the renovated visitors' waiting room with its round dining tables and self-service kitchenette, Nurit and Gabi of Tiberias, visibly worried parents of a teenager recuperating from spinal surgery, are also full of praise: "We thank everyone



FRIENDS HELP BUILD A HOSPITAL!

SHIPPING MAGNATE SAMMY OFER LAUNCHES SUB-MARINE HOSPITAL



L to R: Dr. Esty Golan, Chief Administrative Officer and Director of Global Resources, RHCC; Sammy Ofer's son, Mr. Idan Ofer; Mr. Sammy Ofer; Prof. Raphael Beyar, Director General of RHCC.

When the dignified elderly gentleman attired in a tailored suit of fine cloth the color of dark-yellow oriental spices or a bronze-yellow Mediterranean sun took the stage at RHCC on May 18th, spread his hands wide, and addressed an audience of family, friends, business associates, and Rambam leadership and staff in these few, simple words – “Thank you, I love you” – his

listeners knew from his generous deeds that this is a man who means what he says.

The speaker was Mr. Sammy Ofer, 86, who grew up poor in the Haifa seaside neighborhood of *Bat Galim* (lit., *Daughter of the Waves*) near today's Rambam and went on to achieve fame as a global shipping magnate, art collector and philanthropist. The event

was held to honor Mr. Ofer's \$25 million gift to RHCC, which he has earmarked for two purposes — construction of a 750-bed underground emergency hospital and renovation of Rambam's Departments of Surgery, Urology and ENT.

RHCC Director General Rafael Beyar called construction of the underground hospital “a

national project in answer to a national strategic need.”

Nobel Laureate Prof. Aaron Ciechanover, Chair of Rambam's Scientific Advisory Board, told the audience that Mr. Ofer's contribution represents an occasion both happy and sad: “The Israeli government should be responsible for building a fortified underground hospital for the more than 2 million citizens of Northern Israel,” he chided, while praising Mr. Ofer's largesse and placing it in the context of a global Jewish culture of charitable giving. “We're speaking of an ancient culture of philanthropy motivated by an obligation among community and family members to look after one another whether near or far,” he said.

Veteran investigative journalist Mr. Rafi Ginat emceed the

event, charming the audience with anecdotes of Mr. Ofer's happening to meet youngsters whose stories moved him, such as the waitress who served him a meal or the boy selling flowers at a traffic intersection, and whose educations he went on to personally finance.

Perhaps the event's most emotional moment came when Captain (res.) Tomer Bohadana, who was seriously wounded while commanding a paratrooper reserve unit during the Second Lebanon War, and whose life was saved at Rambam, took the stage. “What did I think of when I was on the stretcher? I thought of my unit, and I thought that I have to stay conscious because at Rambam they, the doctors and the high technology there, will take care of me,” he said before publicly thanking Rambam's doctors and nurses and personally thanking Mr. Ofer: “Soldiers have to know that there are people that they can depend on. Although you don't go shoulder to shoulder with us on the battlefield, we know that you are with us.” ●

MSSRS. ZUR FELDMAN AND YUVAL RABIN DEDICATE MOBILE HEART-LUNG MACHINE



L to R: Yuval Rabin, Zur Feldman and Tali (Mrs. Yuval) Rabin

Thanks to Washington-based Israeli businessmen Zur Feldman and Yuval Rabin, the General Intensive Care Unit (ICU) at RHCC has recently acquired a mobile heart-lung machine.

Purchase of the new equipment was made possible by funds raised from the Washington, D.C. Jewish community during a mission by Dr. Yaron Bar-Lavie, Director of General ICU, in the immediate aftermath of the Second Lebanon War. With the active help of Msrs. Feldman and Rabin, Dr. Bar-Lavie was able to raise \$100,000 in a single night. ●

MUSLIM HOUSE OF PRAYER OPENS AT RHCC



A Muslim prayer house, the first to be opened in a government hospital in Israel, was dedicated at Rambam on April 17th by Minister of Science, Culture and Sports Raleb Majadele (pictured) in the presence of Health Minister Yacov Ben Yizri, Haifa Mayor Yona Yahav and our medical center's executive leadership. ●

TACHLIS

The December 2007 inaugural issue of *Rambam On Call* shared news of generous investments by Friends of Rambam in RHCC'S 5-10 year, \$300 million Vision of Adam development plan.

Five months later, hopes and plans have turned into initial actions on – and in – the ground. The Emergency Trauma Center's fortified new roof has been poured. Moreover, an exposed parking lot and cluster of obsolete bungalows have been demolished to free up 16 dunams (16,000 sq m) of land for construction of a 3-level underground parking garage whose deepest level can be converted within 72 hours into a 750-bed emergency hospital fortified against missile, chemical and biological warfare. The parking garage's reinforced ceiling will provide the foundation for the proposed new Children's Hospital, Cardiology and Oncology Hospital, and Biomedical Discovery Tower.

All this activity began appropriately in the Hebrew month of Adar (March) when according to the Purim holiday tradition, everyday reality turns upside-down. Rambam strives for a paperless work environment, else announcements flooding employees' mailboxes in that month alone would have generated enough paper to insulate the planned new structures: *ER has relocated temporarily to basement facilities; the Municipality has rerouted traffic in the hospital's vicinity; your pardon is begged for construction noise and vibrations, the brief disruption of medical-gas supplies, the closure of on-campus parking...*

In compensation, the always lively Rambam campus has become even more exciting. Vivid orange or yellow polyethylene debris chutes snake down the exteriors of buildings under renovation. Bright yellow excavators, bulldozers, cement mixers and cranes crunch and roar and whirl. Corrugated tin fences catch the sun. The gouged

ground deepens and widens while pyramidal mounds of newly dug dirt rise, which – this being Israel – have necessitated work stoppages while several unearthed Byzantine-era mosaic floors have been salvaged by the Antiquities Authority.

At the calm eye of this creative storm is dapper and apparently unflappable Col. (ret.) Ariye Berkoviz, Head of the Engineering Department, who brings to his overall supervision of the project a career-military background with responsibility for overseeing all building and development programs of the Israel Defense Forces (IDF).

Several times a week since May 2007, Mr. Berkoviz has presided over meetings that bring to Rambam about a dozen of the currently forty professionals at work on the project: building and landscape architects, civil engineers, and infrastructure specialists responsible for such aspects as acoustics, air conditioning, electricity, elevators, fire safety, plumbing, and waste disposal.



Mr. Ariye Berkoviz, Head of the Engineering Department, flanked by fourteen of the forty architects and engineers currently at work on the Sammy Ofer Underground Hospital.

At these meetings, the neatly arranged seminar table's coffee packets and plates with two kinds of cake squares are pushed aside by participants to free up space for laptop computers and unfolded floor plans. Prof. Rafael Beyar and his executive team make the macro decisions, but Mr. Berkoviz and his forum of experts make the thousands of micro decisions that go into designing and building a 21st century medical center – and nothing escapes their attention. Today, they are refining plans for the underground parking garage and emergency hospital: *How will we protect the medical-gas lines against exhaust fumes and vandalism and prevent internal corrosion? How many permanent and how many*

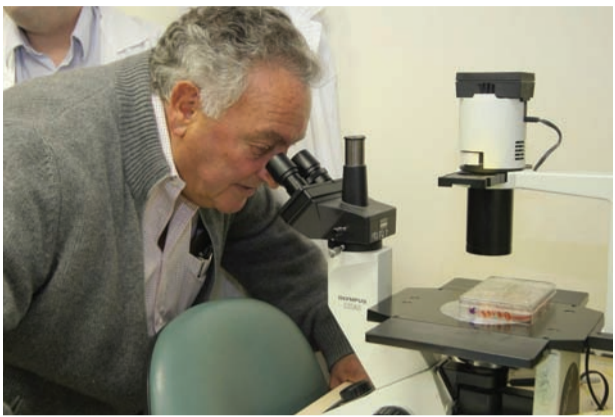
portable toilets should there be, and how will we integrate them with 1,500 parking spaces? How will we ventilate the underground facility in times of peace and war and place the vents so that they won't swallow dropped car keys? How will the emergency hospital's laundry and garbage be collected?

Anticipated completion dates for the Sammy Ofer Underground Hospital and the Ruth Rappaport Children's Hospital are the summers of 2010 and 2011 respectively. ●



USA QATAR RHCC MEDICAL PARTNERSHIP

PROPOSED BY VISIONARY NEW FRIEND OF RAMBAM SANFORD WEILL



Friend of Rambam Sanford Weill at the Rappaport Research Institute on the Rambam campus

The visit to RHCC of American financier and philanthropist Sanford Weill, 75, and his dramatic arrival at Rambam by helicopter, attracted national media coverage in Israel.

Mr. Weill, who is Founder and Chairman Emeritus of Citigroup, Inc. and Chairman of the Board of Overseers of Cornell University's Weill Cornell Medical College and Graduate School of Medical Sciences, was accompanied by cardiologist Dr. Antonio

Gotto, Provost for Medical Affairs and Dean of Weill Cornell Medical College.

The esteemed visitors came here for two days in February on their way to Weill Cornell Medical College in Qatar (est. 2001), which was preparing to graduate its inaugural class of physicians. The visitors toured the Rambam campus in Haifa and Iscar Metalworking in the Galilee (Israel's North) escorted by RHCC Director

General Prof. Rafael Beyar and President and CEO of Iscar Mr. Eitan Wertheimer respectively. Mr. Weill and Dr. Gotto were also guests of honor at dinner parties hosted by Prof. Beyar and his wife Dalia, and by Mr. Wertheimer and his wife Ariela, at their homes. The Wertheimers are devoted friends of Rambam and chair our 21st-century capital campaign.

During the guests' tour of Rambam, Prof. Beyar proudly described our medical center's history, achievements and vision for the future, including plans for building a Biomedical Discovery Tower. Mr. Weill and Dr. Gotto also met with senior physician-researchers in their laboratories and

heard about investigations currently underway on the Rambam campus into advanced genetics, cardiac electrophysiology, nuclear imaging, and the applicability of stem cells to regenerative medicine.

Guests and hosts found much in common to discuss. Both RHCC and Weill Cornell have achieved recognition as leading medical centers in their respective countries and globally, Rambam by virtue of the extraordinary cooperation we enjoy with the Technion-Israel Institute of Technology and the city of Haifa's scientific high-tech industry, and Weill Cornell with considerable thanks to Sanford and Joan Weill's magnanimous investment of social-venture capital.

Before departing Israel for Qatar, Mr. Weill and Dr.

Gotto discussed with Prof. Beyar a possible 3-way medical collaboration among Weill Cornell, WCMC-Qatar and RHCC. The idea has been warmly received here.

Rambam's Middle East outreach program already includes providing sick children from neighboring Arab countries with medical treatment unavailable to them at home; cooperating with medical professionals from the Palestinian Authority, Jordan and elsewhere; and participating in regional scientific exchange, notably including the *Frontiers of Chemical Sciences II: Research & Education in the Middle East* conference (Malta II).

For our physician-scientists, inclusion of RHCC in the Weill Cornell-Qatar initiative would represent a natural next step. ●

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BHLSI 3RD ANNUAL HAIFA BIO SEMINAR RAMBAM HOSTS BIOTECH STARTUPISTS & INVESTORS



"It was most natural for us to hold this event at Rambam. Prof. Rafi Beyar has been a leading advocate for BHLSI since its inception, and his commitment to enhancing Israel's life-sciences sector and working collaboratively with the Boston community has benefited entrepreneurs throughout Israel. Prof. Beyar, and Rambam as an institution, have opened the door for entrepreneurs seeking to validate their science and technology."
- **Robin JR Blatt, Director,**
Boston-Haifa Life Sciences Initiative

In March, Rambam Health Care Campus and its Director, Prof. Rafael Beyar, hosted the Combined Jewish Philanthropies (CJP) Boston-Haifa Life Sciences Initiative (BHLSI) 3rd Annual Haifa Bio Seminar.

The event, subtitled "Israeli Innovations for Global Health: Translating Ideas into Winning Products," attracted 300 Israeli entrepreneurs – CEOs, engineers, physicians and other scientists, and R&D professionals – engaged in such fields as biotech, clean tech, medical-device design and pharmaceuticals.

They came to hear keynote speaker Dr. Larry Kessler of the U.S. Food and Drug Administration's Center for Devices and Radiological Health, who directs the Office of Science and Engineering Laboratories and chairs the Global Harmonization Task Force. Dr. Kessler addressed FDA regulatory criteria for drug and medical-device safety and effectiveness.

The speakers' lineup also featured over a dozen venture capitalists and industrialists that advised participants about how to successfully raise capital, strategically build a business, and

internationally market Israeli high-tech healthcare products. Among them were Gilead Fortuna, Senior Research Fellow of the Technion's Neaman Institute and former Vice President of TEVA Pharmaceuticals.

Israel annually registers the world's highest percentage of life-sciences patents per capita. For this reason, as Dr. Eli Opper, Chief Scientist of the Israel Ministry of Industry, Trade & Labor, told the audience, "promoting the industrialization of biotechnology is crucial for the sake of our country's economic future."

Early stage entrepreneur and Rambam specialist-physician Dr. Itzhak Koifman of the General Intensive Care Unit attended dressed for work in blue hospital scrubs. "I earned my MD at the Technion, whose technological approach to



"If you want to put Haifa on the map in the life sciences, then you have to bring investors and companies from all over the world to see the city and Rambam Hospital, a world-class resource for the life sciences industry and one of Israel's most strategic assets."
- **Karen Doryoseph, Director,**
Boston-Haifa Connection

medicine has enabled me to find solutions to clinical problems in situations where other doctors are stumped," he said, explaining the event's attraction for him. "I am involved in a startup and came to see what these people can teach me – and they have taught me a lot! Like an incubator, this event gives me tools to solve problems in business financing, planning and management."

Veteran entrepreneur Shai Levanon, CEO of Rcadia Medical Imaging Ltd. in Haifa, said he came not only for the networking and to hear Dr.



"My life is dedicated to the passion of Israel. I retired 14 years ago from the medical products diagnostic industry, and I decided that I was going to devote my senior years to helping the economic and social development of the State of Israel. It's about letting my children and grandchildren and the Jewish community know that we have to continue the legacy of our people."
- **Steve Doppelt, Co-Chair,**
Economic Development Committee
of the Boston-Haifa Connection

Kessler, but also because of the RHCC imprimatur, adding, "To be invited to this program by Rambam and Prof. Beyar is like an automotive-industry entrepreneur's being invited to the main showroom of General Motors."

BHLSI was launched in 2004 by the CJP Boston-Haifa Connection in collaboration with MATI Haifa and other Haifa-based organizations, and aims to catalyze business collaborations and enhance Haifa's visibility as a leader in the life sciences. Sponsors of the 3rd Annual Haifa Bio Seminar included Bank Leumi, Ernst & Young, the Massachusetts Office of International Trade & Investment (MOITI), The Marker, and ZAG/S&W. Haifa Mayor Yona Yahav hosted a festive cocktail and networking reception. ●



"Inventors, scientists and engineers at Rambam Health Care Campus and in Haifa can best help public health by working with their clinical and patient-population experts to look to the challenge for the next 10 years and to partner with their colleagues around the world and with the relevant regulatory agencies to make the most important healthcare products widely available."
- **Keynote Speaker Dr. Larry Kessler,**
U.S. Food and Drug Administration

AFRICAN ALLIANCE

ZAMBIAN BOY TREATED FOR RARE SKIN DISEASE

P8

A darling Zambian boy named Emmanuel has returned with his mother Elizabeth to his native Africa after a 3-month hospitalization at Rambam, during which time he was treated for harlequin ichthyosis, an extremely rare skin disease that can cause death at a young age from dehydration and infections.

Normally, a small protein mediates the loading of lipids into epidermal-cell vesicles, which then discharge their protective contents, including lipids, into the uppermost epidermal layers. People with the disease, however, lack this protein. As a result, their bodies are covered with a patchwork of thick scales that recall the diamond-patterned costume of the clown Harlequin from the 16th-century *Commedia dell'Arte* and have given the disorder its name.

Emmanuel reached RHCC because of the unique expertise of Prof. Eli Sprecher, Senior Physician in the Department of Dermatology at Rambam and Head of the Rappaport Faculty of Medicine and Research Institute's Center for Translational

Genetics. Prof. Sprecher is recognized as one of the leaders worldwide in the field of genetic skin diseases and, in 2007, received the World Congress of Dermatology's Alfred Marchionini Research Award in recognition of his achievements.

Emmanuel has returned to Zambia in good condition with plenty of medicine for a number of months. In another half year, he is scheduled to return to Rambam for an additional series of treatments.

"Caring for Emmanuel was a very special experience for me," Prof. Sprecher says, "as thanks to the generosity of his Zambian sponsor, over the period of his extended stay in Israel we could diagnose the disease, identify the causative genetic defect, bestow and assess the benefits of medical treatment, and provide Emmanuel and his mother with all the information and the technical skills needed to carry on therapy at home.

Prof. Eli Sprecher with Emmanuel and his mother, Elizabeth



"Treating genetic diseases can be frustrating," he adds, "as for most of these diseases, specific and/or efficient treatment is inexistent. Harlequin ichthyosis is an exception to the rule because despite its severity, the disease is amenable to drug therapy." ●



Orthopedic Surgeon and Visiting Clinical Fellow Dr. Lawrence Akinyoola of Nigeria receives his Certificate of Course Completion from Prof. Michael Soudry, Chairman, Division of Orthopedic Surgery and Traumatology and Director, Department of Orthopedics A.

NIGERIAN SURGEON COMPLETES FELLOWSHIP

In April, Dr. Lawrence Akinyoola, an orthopedic surgeon from Nigeria in Western Africa, completed a 6-month clinical fellowship at Rambam in musculoskeletal and joint replacement traumatology. The advanced training was provided by our Division of Orthopedic Surgery and Traumatology under the Chairmanship of Prof. Michael Soudry. During the

program's second half, Dr. Akinyoola's wife Cynthia, a nurse, joined him on the Rambam campus for advanced training in her profession. Pictured is the farewell ceremony for Dr. Akinyoola, who spoke with emotion of his appreciation for the Division of Orthopedic Surgery and Traumatology's medical excellence, the high level of training he had received

there, and the hospitality and readiness to share knowledge expressed by Prof. Soudry and his entire staff. Dr. Akinyoola added that he hoped his experience would begin a tradition of our welcoming additional physician specialists from Nigeria for clinical fellowships at Rambam. ●

KAREN AND JOSEPH LEVINE HOST AFORAM RECEPTION

On February 4th, Dr. and Mrs. Joseph Levine hosted a dinner reception for over 30 members of the American Friends of Rambam Medical Center (AFORAM) at their lovely Manhattan home. Prof. Aaron Ciechanover, Chair of

Rambam's Scientific Advisory Board, and Prof. Karl Skorecki, Director of Medical and Research Development at Rambam, were the featured speakers. Dinner guests praised the engaging nature of the speakers'

presentations and the warm and elegant hospitality of their host and hostess. ●

L to R: Mr. Richard Kandel; Karen (Mrs. Joseph) Levine; Dr. Joseph Levine; Mr. Harvey Krueger, AFORAM Vice President; Nobel Laureate Prof. Aaron Ciechanover; Ms. Candice Joo.



ISRAELI FRIENDS

RHCC congratulates Prof. Yehuda Hayuth, past

President of the University of Haifa and a world authority on shipping and ports, on his election as Chairman of the Israeli Friends of Rambam Medical Center and wishes him great success on behalf of realizing our shared vision for the Rambam campus. ●

TAKE ANOTHER HUG

Additional good news: ● Aviva Tessler, President and Founder of Maryland, USA-based **Operation Embrace** (est. 2001), has announced renewed funding for its Foxman Post Traumatic Stress

Disorder (PTSD) program at Rambam, whose purpose is to respond to the long-term needs of terror victims. ● The New-York based **Women's League for Israel** has made a generous grant

to RHCC, earmarked in part for the Ruth Rappaport Children's Hospital capital campaign and in part to establish a Post Traumatic Stress Disorder (PTSD) Family Therapy Unit. **Thank you!**

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