STRAVING TO EXCELLENCE
TEL AVIV MEDICAL CENTER

Michal Roll PhD, MBA
Director, R&D Division
Emergency Underground Hospital

Ofer (Heart & Brain)

Sourasky (Medicine)

Lis (Ob-Gyn)

Rehabilitation Hospital

Arison (Surgery & Oncology)

Nursing School

Dana-Dwek (Pediatrics)
Tel Aviv Medical Center
ACCREDITED BY
Joint Commission International
AS A LEADING ACADEMIC MEDICAL CENTER
FOR ITS CLINICAL WORK, ACADEMIC AND HUMAN RESEARCH
Facts & Figures (2013)

- 50 Departments
- 114 Outpatient Clinics
- 1,400 beds
- 1,456 Nurses
- 3,037 Healthcare Professionals
- 1,008 Physicians
- Annual Budget 2.2 Billion NIS $550 Million
Facts & Figures (2013)

- 92,800 New Admissions
- 209,000 ER Visits
- 33,428 Surgical Procedures
- 10,982 Deliveries
- 1,648,000 Outpatient Clinic Visits
- 4,670 Coronary Interventions
No. New Oncological Patients - 2013

- Soroka Med. Ctr.: 1,300
- Hadassah Med. Ctr.: 2,600
- Sheba Med. Ctr.: 2,501
- Rabin Med. Ctr.: 2,725
- Rambam Med. Ctr.: 3,172
- Tel Aviv Med. Ctr.: 3,912
2013-2014
TLVMC – A Major Teaching Hospital of The Tel-Aviv University

271 Medical Students
110 Clinical Rotations
3 weeks Average Rotation
# Peer-reviewed Publications 2013 – 2010

<table>
<thead>
<tr>
<th>Categories</th>
<th>Rec.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgery</td>
<td>304</td>
</tr>
<tr>
<td>Neurology</td>
<td>196</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>133</td>
</tr>
<tr>
<td>Cardiology</td>
<td>131</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>120</td>
</tr>
<tr>
<td>Internal Medicine</td>
<td>104</td>
</tr>
<tr>
<td>Laboratory Medicine</td>
<td>102</td>
</tr>
<tr>
<td>Oncology</td>
<td>93</td>
</tr>
<tr>
<td>Obstetrics &amp; Gynecology</td>
<td>92</td>
</tr>
<tr>
<td>Movement Disorders</td>
<td>90</td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>87</td>
</tr>
<tr>
<td>Endocrinology</td>
<td>84</td>
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<tr>
<td>Dermatology</td>
<td>82</td>
</tr>
<tr>
<td>Otolaryngology</td>
<td>77</td>
</tr>
<tr>
<td>Neurosurgery</td>
<td>67</td>
</tr>
<tr>
<td>Orthopedics</td>
<td>66</td>
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<tbody>
<tr>
<td>Epidemiology</td>
<td>56</td>
</tr>
<tr>
<td>Psychiatry &amp; Psychology</td>
<td>52</td>
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<tr>
<td>Neonatology</td>
<td>50</td>
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<tr>
<td>Anesthesiology</td>
<td>48</td>
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<tr>
<td>Radiology</td>
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<tr>
<td>Urology</td>
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<tr>
<td>Hematology</td>
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<tr>
<td>Nephrology</td>
<td>28</td>
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<tr>
<td>Critical Care</td>
<td>25</td>
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<tr>
<td>Orthopedic Oncology</td>
<td>24</td>
</tr>
<tr>
<td>Emergency Medicine</td>
<td>17</td>
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<tr>
<td>Plastic Surgery</td>
<td>16</td>
</tr>
<tr>
<td>Oral and Maxillofacial Surgery</td>
<td>11</td>
</tr>
<tr>
<td>Microbiology</td>
<td>11</td>
</tr>
<tr>
<td>Pain Medicine</td>
<td>11</td>
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</tbody>
</table>

**Total Publications: 2,313**

*The statistics are based on PubMed data by subjects*
Medical Center As an Incubator for Excellence in Research
38 Basic Research labs connected to specific clinical departments and institutes

Interdepartmental and collaborative projects, based on dedicated infrastructure

Translational research – from bench to bedside
Specific animal models for disease research

Clinical research - phase 1 to phase 4, investigator initiated or sponsored

Novel ideas based on our patents, transferred to industry or new companies
Over 1300 MDs (over 705 specialists)

Over 320 have academic appointments at TAU (102 professors)

Over 40 MD-PhDs in leading positions

About 100 dedicated, trained clinical research coordinators (CRA’s)

Outstanding young clinicians in PhD programs

Over 60 senior researchers as clinical scientists (PhD)

About 100 Graduate Students for PhD and MSc
Infrastructure for Research

- Dedicated labs – cancer research, GI diseases
- Brain imaging research lab (3 TESLA MRI)
- Genomics and bioinformatics lab
- Gait assessment lab
- Cell therapy with GMP facility
- Animal facility for small animals
- Central bio-bank
## TLVMMC investment in Research

<table>
<thead>
<tr>
<th>Program</th>
<th>Details</th>
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<tbody>
<tr>
<td><strong>Excellence Fund</strong></td>
<td>Grants for young and established investigators, and for collaborative projects</td>
</tr>
<tr>
<td><strong>“OFEK”</strong></td>
<td>Fellowships for physicians</td>
</tr>
<tr>
<td><strong>Applied Fund</strong></td>
<td>For applied projects-at proof of concept stage</td>
</tr>
<tr>
<td><strong>Scholarships</strong></td>
<td>For outstanding medical students for research ROM program</td>
</tr>
<tr>
<td><strong>Joint Fund</strong></td>
<td>With Weizmann Institute,</td>
</tr>
<tr>
<td><strong>Clinician–researcher Program</strong></td>
<td>“Adopt a Researcher” program</td>
</tr>
<tr>
<td><strong>Consulting services</strong></td>
<td>For researchers</td>
</tr>
<tr>
<td><strong>Patent registration and business development</strong></td>
<td>of IP of Staff</td>
</tr>
<tr>
<td><strong>On-going development of lab infrastructure</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Joint Fund</strong></td>
<td>With TAU</td>
</tr>
<tr>
<td><strong>GCP courses</strong></td>
<td>Specific CRA track</td>
</tr>
<tr>
<td><strong>Editing and statistics services</strong></td>
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We place utmost importance on respecting and protecting the safety of our research participants.

We are committed to approving and conducting clinical research that fully complies with all legal and regulatory requirements.
TLVMC – a leader in clinical trials:

- Up-to-date and advanced clinical care services
- Patient cohorts for various disease indications
- IRB according to international guidelines

- Infrastructure-specialized labs, advanced equipment
- Dedicated staff expert in running clinical trials-GCP trained
- in house on-going auditing

- Management-contracts and insurance
PROFESSIONAL CLINICAL RESEARCH

Expert IRB-registered in the NIH, FDA

A. Clinical Research Center – for phase I and bioequivalence studies

B. Phase 1 Oncology

Clinical Trials Network Services – for fast recruitment of and monitoring patients for contract research

Commitment to GCP - compulsory training of physicians and coordinators
IRB Activity and Clinical Contracts

[Bar chart showing the number of contracts and protocols from 2001 to 2013. The chart indicates a steady increase in the number of contracts and protocols over the years.]
WE ARE A MEMBER OF THE INSPIRE PROGRAM AMONG LEADING ACADEMIC CENTERS IN CLINICAL RESEARCH WORLD WIDE
TASMC - First site in Israel approved to perform Novartis Oncology Translational Medicine, First in Man trials.
Clinical Trials according to No. of Financing Bodies

<table>
<thead>
<tr>
<th>Year</th>
<th>Financing Bodies</th>
<th>ABROAD</th>
<th>ISRAEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>65</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>68</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>73</td>
<td>74</td>
<td></td>
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</tbody>
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Continuous monitoring of all ongoing trials

In depth audit of selected trials (according to researchers, departments, new drugs, devices, genetics, special populations)

Checking patient source data, informed consents, documents

All findings are presented to the committee for further evaluation and recommendation to the IRB and the Director General, for punishing measures
INTERNAL AUDIT OF CLINICAL TRIALS

- Examined Trials
- Required Correction
- Rejected

Years: 2005 to 2014

- 2005: 53 Examined Trials, 27 Required Correction, 0 Rejected
- 2006: 84 Examined Trials, 32 Required Correction, 0 Rejected
- 2007: 95 Examined Trials, 13 Required Correction, 8 Rejected
- 2008: 115 Examined Trials, 31 Required Correction, 8 Rejected
- 2009: 134 Examined Trials, 4 Required Correction, 1 Rejected
- 2010: 73 Examined Trials, 5 Required Correction, 0 Rejected
- 2011: 76 Examined Trials, 0 Required Correction, 1 Rejected
- 2012: 95 Examined Trials, 3 Required Correction, 0 Rejected
- 2013: 109 Examined Trials, 4 Required Correction, 0 Rejected
- 2014: 147 Examined Trials, 4 Required Correction, 0 Rejected
IF

Protocol is approved without any need for corrections and changes;

No need for MOH approval;

About 3 weeks from submission to IRB approval;

Annex 7 is provided only after contract is signed- get it ready in time!
FUNDING OF RESEARCH 2007-2013

Clinical Trial Contracts

Competitive Grants

Other
<table>
<thead>
<tr>
<th>NIH</th>
<th>NCI - Radiation Therapy Oncology Group (RTOG)</th>
<th>MacDonnell Foundation</th>
<th>National Parkinson Foundation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALS Assoc.</td>
<td>NASRAD - brain and behavior research fund</td>
<td>MJ Fox Foundation</td>
<td>European Union research programs</td>
</tr>
<tr>
<td>March of Dimes</td>
<td>Fragile X Foundation</td>
<td>DOD - US army</td>
<td>HELMSLEY</td>
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<td></td>
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<td>ISF</td>
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</tbody>
</table>
Projects in medical devices, new molecules and diagnostics

Technology transfer of inventions of the staff to new Co. Industry, or incubators
ENHANCING INNOVATION

✓ A HUB FOR FAST ANALYSIS OF NEW IDEAS
✓ INTERNAL FUNDING FOR PROOF OF CONCEPT STUDIES
✓ MEDTECH CLUB- MEETING LEADERS AND EXPERTS
✓ TASMC WORKSHOP- INNOVATION AND BASICS OF DEVICES DEVELOPMENT
INTERNAL ACCELERATOR FOR MEDICAL DEVICES: 2013-2014

Process of assessing and developing 38 new ideas

Brainstorming 38
Patent search 20
Market search 18
Opinion leaders 15
Provisional 10

No. of projects screened
3 months
3 months

3 months
TASMC Accelerator – from idea to commercialization

- Invention disclosure
  - Preliminary brainstorming
  - Number of projects: 30
  - Average duration: 1 month

- The need
  - Assessment and business feasibility
  - Number of projects: 25
  - Average duration: 1 month

- The solution
  - Clinical-Tehnical team gathering and solution configuration
  - Number of projects: 18
  - Average duration: 1-3 months

- IP strategy and patent application submission
  - Number of projects: 10
  - Average duration: 1 month

- Marketing
  - Number of projects: 10
  - Average duration: 2-6 months

- Agreement
  - Number of projects: 5
  - Average duration: 6 months

- DEVICES
  - TASMC Accelerator – from idea to commercialization
IN CONCLUSION:

As a public, government regulated academic medical center we aim to develop cutting edge research and successfully transfer projects to the clinic.

We invest in our strength- translational research, aiming to constantly improve and excel at all levels.

Our experience shows that collaboration between departments and with other institutes leads to synergy – better projects, more advanced in their development.

All research funding is spent on research, our staff is highly motivated and the outcome is improving every year.