I thought you might be interested in what is happening in israeli co. s . since you like cutting edge stuff

Schwartz Lab

Prof. Michal Schwartz: **Reversing the symptoms of Alzheimer's and neurodegeneration.** Prof. Michal Schwartz, who discovered the link between the immune system and the brain, aims to slow, stop – even reverse – the progress of diseases such as Alzheimer's, Parkinson's, ALS, and multiple sclerosis (MS). Her many breakthroughs include an immune-based therapy that, when given to mice with Alzheimer's, eliminated the brain plaques associated with the disease. And together with Prof. Ido Amit, she recently developed an antibody that helps restore cognitive abilities and brain cells in mice, thus actually reversing some of the effects of aging. The two scientists are now developing this research into a vaccine (among other things) to slow the brain's aging process.

Sobel Lab

Prof. Noam Sobel investigates the many complexities of the human olfactory system, the faulty function of which can be an **early sign of neurological and cognitive deteriorations**; for example, a well-known symptom of Alzheimer's is mistaking the smell of chocolate for that of oranges. Based on this knowledge, he has designed olfactometers (devices that generate odors) that are capable of providing early diagnosis of Alzheimer's.

Segal lab

The Segal lab is a multi-disciplinary lab of computational biologists and scientists focusing on microbiome, nutrition, genetics, and gene regulation in health and disease. They aim to **develop personalized nutrition and personalized medicine** using machine learning, computational biology, probabilistic modeling, and analysis of heterogeneous genomic and clinical data.

Eran Segal is a computational biologist. Segal has shown that there is no "One size fits all" diet, and that the very same foods can be good for some and bad for others. Using

continuous glucose monitoring and food journals, he has shown that the glucose spike after the same foods differs significantly between people. This means that personalized food plans can help fight diabetes, possibly with much less effort than usual diets. Later, he used blood DNA testing, feces analysis (gut bacteria) along with neural networks learning to be able to predict what diet will be optimal for each person in terms of post-prandial glucose reaction.

20+ Life Science Companies

(imaging AI) Zebra Zebra predicts that as the global population ages and more people enter the middle class, demand for medical imaging diagnosis will outstrip the supply of radiologists. Using machine learning, Zebra has created an algorithm that it says can help meet the excess demand and improve diagnostic accuracy. The first application of the technology is for detecting breast cancer in mammograms. In the future, Zebra intends to teach its algorithms to diagnose other diseases, as well. The medical diagnostics technology has attracted a wide range of investors from Marc Benioff, the billionaire Salesforce founder, to healthcare-focused venture capital funds.

(crazy good movement sensor) ContinUse Biometrics is gaining traction in the medical arena for its single-sensor platform that detects nanoscale movements in fully dressed people at any angle, enabling non-contact measurement of heartbeat, blood pressure, breathing pace, glucose level, oxygen saturation and blood-alcohol levels. Newborn intensive care units, sleep labs and telemedicine providers are among those interested in the platform. The first products from this Tel Aviv company are going to market by the second half of 2017.

(pain monitoring device) Medasense is soon to receive the CE Mark to begin sales in Europe Union countries of its novel NOL (Nociception Level), a continuous, non-invasive pain-monitoring device. NOL is the first clinically accepted tool to objectively monitor changes in pain level, even when patients cannot describe their pain because they are sedated, demented or too young to talk.

(personalized microbiome) DayTwo Is a personalized nutrition service based on individual gut microbiome and the way their body processes food.

(microbiome based therapeutics) BiomX discovers and develops innovative microbiome-based therapeutics to prevent and treat cancer, IBD, and skin disorders that stem from microbiome dysbiosis. The Company's microbiome modulation platform uses cutting-edge science, research, and licensed technology created by its founders, Professor Rotem Sorek, ██., and Dr. Eran Elinav, ██./██., both of The Weizmann

Institute of Science; and Professor Timothy K. Lu, ██./██., of The Massachusetts Institute of Technology.

(immune drug discovery w AI) CytoReason is using its machine-learning model of the immune-system to discover complex patterns in biological data. Founded in 2016 by bioinformatics and digital health experts, their vision is to use the most recent accomplishments in computer science to combine immunology domain expertise with state-of-the-art artificial intelligence technology to accelerate breakthroughs that are hidden in the massive amounts of data.

(AI peptide discovery) Pepticom Ltd. was founded in 2011 to revolutionize the discovery of novel peptide drug candidates. Pepticom's key asset is an exceptional artificial intelligence platform aimed at designing peptide ligands based upon solved crystal structures. Pepticom operates in various disciplines, generates innovative binding peptides for diverse targets. The main projects involve developing agonists and antagonists for immunology and metabolic disorders. (read more)

(chronic inflammation biomarker) Improdia's mission is to optimize personalized treatments of patients suffering from pathologies characterized by chronic inflammation. Improdia is developing a simple, rapid, reliable and non-invasive blood test for the evaluation of the individuals' immune status and inflammatory conditions based on novel biomarkers, which sense the patients' immune system function.

(Alzheimer immune biomarker) NeuroQuest has developed a unique blood-based diagnostic test for Alzheimer's based on the specific response of the immune system. The test is based on the highly acclaimed research work of Prof. Michal Schwartz, Chair of Neuroimmunology at the Weizmann Institute, whose research group has pioneered work in the field of neuroimmunology for more than a decade.

(epigenetic liquid diagnostics) Nucleix uses epigenetics for cancer detection in liquid biopsy. Bladder EpiCheck is Nucleix's first product that includes a panel of 15 DNA methylation biomarkers for detection of bladder cancer.

(novel diagnostics) Me-Med Main product is ImmunoXpert™ a novel assay that accurately distinguishes between bacterial and viral infections based on the patient immune response to different infection types. ImmunoXpert™ provides physicians with rapid and actionable clinical information to help guide antibiotic treatment decisions.

(nanoscale viral traps) Vecoy technology will fundamentally change the treatment of viral infections by administering novel nano-scale virus-traps that capture and destroy viruses.

(mobile diagnostics) MobileODT is creating the next generation of smart medical devices. MobileODT turns mobile technologies into intelligent visual diagnostic tools that enable any health provider, anywhere in the world, to conduct visual inspections at the level of an expert practitioner. Their first product is an FDA cleared internet-connected mobile colposcope. The EVA (Enhanced Visual Assessment) System and has been validated in some of the world's harshest environments and has received accolades from clinicians in the world's leading hospitals, including: MD Anderson, Mass General Hospital, and Northwell.

(cognitive tracking – hard to use) MyndYou helps bridge the gap between safety and independence while maximizing care and quality-of-life for more than 150 million older adults living with mild cognitive impairment, Alzheimer's and other types of Dementia. MyndYou is an artificial intelligence based platform designed to aid therapists and care providers in tracking and treating cognitive decline among the growing senior population.

(medical imaging) RealView Imaging employs its proprietary Digital Light Shaping™ technology to create a unique hyper-realistic experience for visualization of medical images, empowering clinicians with intuitive comprehension of complex 3D structures. The HOLOSCOPE™ product line provides full color, high resolution, dynamic and interactive 3D images in free space from any medical 3D volumetric data. The HOLOSCOPE™ is the world's first medical holographic system that provides image intimacy™ capabilities for direct and precise interaction with and within the holographic images.

(medical imaging) Aspect Imaging designs and develops compact MR imaging and NMR systems for preclinical, medical and advanced industrial applications. Aspect Imaging's breakthrough technology—Compact High-Performance Permanent Magnets— offers unique and comprehensive solutions to the primary obstacles that exist in the current MRI market.

(computer vision blood diagnostics) Sight Diagnostics Combining AI and a breakthrough hardware to bring lab-quality CBC results to the doctor's office

(turns injectables into oral meds) Oramed Pharmaceuticals has developed an innovative technology to transform injectable treatments into oral therapies. Oramed's flagship product, an oral insulin capsule, has the potential to better the lives of millions

of diabetics around the world – allowing, amongst other things, type 2 patients to begin insulin therapy earlier without fear of needles. Oramed's oral insulin is currently in advanced clinical trials under the US FDA for both type 1 and type 2 diabetes.

(cute tech for gastric yuck) Intec Pharma is a drug development company, applying its innovative proprietary gastric retention technology to develop improved formulations of drugs. The Accordion Pill™, a novel gastro-retentive delivery system, significantly improves the Pharmacokinetics of drugs with either narrow absorption window or poorly soluble drugs that belong to Biopharmaceutics Classification System (BCS) class II and Class IV.

(personalized diagnostics maybe Alzheimers) Rosetta Genomics discovers, develops and commercializes next generation diagnostic tests for personalized medicine. Rosetta Genomics is a CAP accredited, CLIA certified laboratory providing microRNA-based cancer diagnostic services for healthcare providers and their patients.

Pipeline:

- Lung cancer prognostic (FISH)

- Bladder cancer risk stratification (microRNA)

- Endometrial cancer stratification (microRNA)

- Alzheimer's Disease-early detection (microRNA)

(synthetic bones and joints) Bonus Biogroup is a biotechnology company applying a proprietary technology to generate viable tissue-regenerating bone grafts. The company aims to become a world leader in the field of tissue engineering and live bone transplantation in December 2016 performed first successful lab-grown bone transplant.

(3D printing of stem cells) Nano Founded in 2012, the startup has created a worldwide name for itself. In addition to manufacturing PCB's (printed circuit boards) which connect electronic devices through conductive tracks, Nano Dimension's breakthrough has been to discover how to print stem cells at high resolutions and high volumes.

(maybe schizophrenia ELISA – see below) Neurogenic Ltd. is a company that researches and develops diagnostics and therapeutics for mental disorders. Over the past 20 years, Neurogenic has collaborated with Professor Meir Shinitzky of the Weizmann Institute and his research team to develop a sensitive and specific blood test developed for the diagnosis of schizophrenia in children with behavioral disorders. The research and the story behind discovery and diagnostics: The PhD thesis written by Michael Deckmann and under the supervision of Professor M. Shinitzky, dealt with isolation of the dopamine receptor. Antibodies against this receptor were used to induce unexpected behavioral deviations in mice, which thereby supported the possibility that schizophrenia is one of the outcomes of an autoimmune reaction against the brain's dopamine receptor. These antibodies were then shown to originate in the periphery as auto-antibodies against the blood platelets which can cross-react with the dopamine receptor in the brain. Screenings of such antibodies on isolated platelets taken from control subjects and schizophrenic patients, indeed substantiated this possibility. An

auto-immune etiology of schizophrenia, which underlies Neurogenic's diagnostic approach, implies that this disease can be treated with immune suppressants. A case report, in which this possibility was tested, indicated a surprisingly effective therapeutic result of such a treatment. Furthermore, the neuroleptic effects of the common drugs subscribed for schizophrenia can in part be related to their immune suppression. The current state of their blood test: A simple ELISA test, which can identify schizophrenia, is now available. The test is mostly applicable to predisposed young subjects with behavioral problems. The test is specific to schizophrenia and can categorize other mental disorders.