

Apple moves on health, drug developers shift into smart gear

With Apple's smartwatch unveiled on September 9, the company takes aim at a digital lifestyle. The Apple Watch may have just tied health and communications into one device, but digital sensors have been booming for some time. As smart devices spill into drug development, investors are piling cash into the sector. In the first half of 2014, the sector attracted \$2.3 billion in venture capital, more than the \$2 billion it raised in all of 2013, according to Rock Health, a S. San Francisco, California-based seed fund. In July, Proteus Digital Health, a Redwood City, California-based firm, which two years ago gained US Food and Drug Administration (FDA) approval for its 'smart pill' ingestible, wireless sensor, raised over \$172 million in a series G financing round. Large pharma is also ramping up its interest in digital technologies as applied to healthcare. Novartis, of Basel, already a Proteus investor (*Nat. Biotechnol.* 30,

1013–1014, 2012), recently licensed Google's 'smart lens' technology (*Nat. Biotechnol.* 32, 856, 2014) for ocular medical applications. Merck, of Whitehouse Station, New Jersey, is also investing in digital health, through its \$500-million Global Health Innovation Fund, which has made more than 20 investments in four years. Shire and Pfizer are also collaborating in studies using gaming products as markers of cognitive ability. Wearables and devices that collect information are creating new opportunities to improve medical delivery and treatment while cutting down on costs. Even so, digital health remains at a relatively early stage of development, and the sector has yet to deliver a killer app—or, indeed, a silver bullet.

'Digital health' encompasses a multitude of approaches. At the Digital Health Forum meeting in London in June, Jack Young, of San Diego-based Qualcomm Ventures, identified categories that range from applications

for sensor-enabled smartphones through data management, analytics and changes in healthcare delivery. All imply massive data capture and analyses that extend far beyond existing patient treatment and management paradigms. "Your body is basically giving tweets all the time about your vitals. What do we do with all those data?" Young asks. Apple, of Cupertino, California, on September 9, released an app that takes a stab at centralizing all those data. The HealthKit body-monitoring system, pulls together health and fitness information—blood pressure readings, weight, body fat, calorie intake, existing medical conditions and sleep patterns—under one framework.

But despite this and other smartphone,

Electric Grand Prix cars to be powered by algae-based generators

Formula E, the world's first electric Grand Prix series, is powering race cars with electricity derived from algae. Designed to showcase and inspire developments in electric car technology, race organizers have partnered with UK startup Aquafuel to supply generators powered by glycerine, a biodiesel by-product that also can be produced from saltwater algae. However, with the technology still at an early stage, the algae-based generators will need to be transported to race locations around the world. The ten-stop circuit kicked off September 13 with the Beijing ePrix, attended by 75,000 spectators.

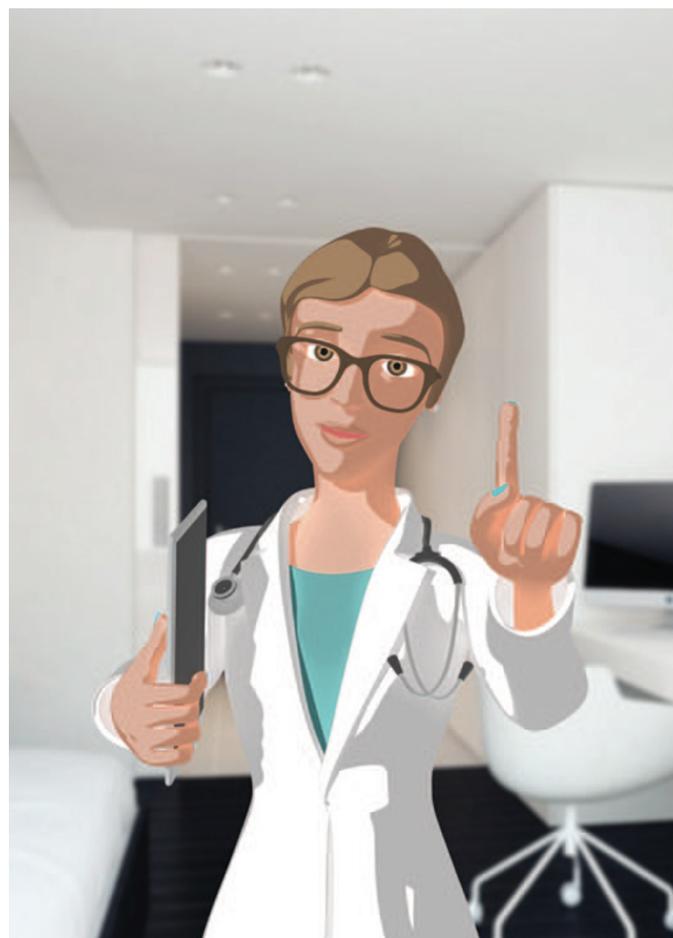
Student-led startup Covagen snapped up by J&J

Cilag, an affiliate of Johnson & Johnson-owned Janssen Pharmaceuticals, has acquired Covagen, launched by two postdocs at ETH Zurich in 2007. Covagen is developing multispecific protein therapeutics through its FynomAb technology platform. Covagen's technology fuses together antibodies and Fynomers, small binding proteins engineered to bind target molecules with the same affinity and specificity as antibodies. Its lead compound, COVA322, is in phase 1b/2a testing for psoriasis. Financial terms were not disclosed, but Covagen had previously raised \$56.6 million. See CEO's story here <http://bit.ly/1tGaine>.

Actionable Genome Consortium to guide NGS in cancer

Four major cancer institutes have joined Illumina to set up a program that helps oncologists diagnose, classify and treat cancer using next-generation sequencing. The Actionable Genome Consortium (AGC) brings together the San Diego-based sequencing giant with the Dana-Farber Cancer Institute, Memorial Sloan-Kettering Cancer Center, MD Anderson Cancer Center and Fred Hutchinson Cancer Research Center. The aim is to define genomic changes in patients' tumors that will allow oncologists to choose optimal therapies and testing strategies. The hope is that defining an 'actionable tumor' will support new diagnostics development and regulatory oversight for genomic testing in cancer.

“This should be the last Ebola epidemic without a cure,” said Ahmed Tejan-Sie, a Burlington, North Carolina physician, who started a petition drive on Change.org to fast track drug and vaccine research for Ebola. Under pressure from physicians, FDA announced in August that it would consider providing treatments under special emergency conditions. **”** (*Reuters*, 3 August 2014)



Geppetto Avatars

Can Geppetto's Sophie persuade a middle-aged man with asthma to stay indoors when pollen counts are high? Avatars could also track a patient's daily changes in emotions, speech and facial expressions.