Univ.	Cluster	Status	Project Name	Technology Description
U of U	LS	Licensee	Aciont	This novel Visulex system combines an ocular iontophoresis device (a method of delivering drugs to the eye using a mild electrical field) and a drug formulation that delivers large drug molecules (also known as macromolecules) to the back of the eye. The device resembles a contact lens which touches the white part of the eye, which is simple to use and can be administered by a nurse. With our current prototype, we were able to show the delivery of several macromolecule drugs in therapeutically relevant levels to the rabbit eye within a 20 minute treatment. This project intends to show that the non-invasive delivery of macromolecules such as Avastin® can safely and effectively treat age related macular degeneration.
U of U	IT	Licensee	ADD.it	ADD.it software runs on mobile devices where game-like animation and points are given to students with attention deficit disorder (ADHD) when the target school related tasks (organizing & tracking) are actually completed. When children earn points they are validated via wireless links to teachers. During after school hours, points are converted to minutes for play (games, videos, music) on the mobile device. ADD.it will integrate the learning management system (LMS) used by the teacher in order to validate student activities and assignments. Parents will have access to daily information related to their child□s assignments and grades via their own mobile handhelds or computer. ADD.it will help students with ADHD succeed at school related
UVU	MMEE	University	Closed-Loop	Utah is second only to Nevada in discovered geothermal sources and has been described as the Saudi Arabia of geothermal energy. Today□s open geothermal power generation sites use steam coming up through a bore hole to turn turbines at the surface. The release of steam and its re-injection back into the thermal dome create operational inefficiencies and pollution. The Closed Loop Geothermal System (CLGS) is a much-improved platform to enable existing geothermal wells to increase efficiency and reduce pollution. The CLGS seals off the thermal dome and pumps a special type of heat transfer food grade oil through a closed loop piping system that flows down through the dome and up into a water tank at the surface to produce clean steam. CLGS is
U of U	IT	Licensee	Granite Mtn.	Chip power is today's primary challenge in semiconductor design. Applying GMT's "Relative Timing" technology reduces the power consumption of semiconductor chips by a factor of 3 to 10 times. This is the only known methodology today that offers considerable energy reduction. If applied in today's use of semiconductors, GMT's technology would save 9 billion dollars in energy production, and its associated greenhouse gas production. Reductions are accomplished using GMT's relative timing technology that only moves data as needed at the minimal power and required frequency. GMT's relative timing technolgy supports significant chip power reduction contrasted with current design methods that have operations occurring each clock cycle.
U of U	MMEE	Licensee	Heavystone	HSL has developed a tungsten carbide (WC) material technology for improving the performance of tools for drilling Carbon Fiber Reinforced Polymer (CFRP) composites. Conventional WC tools for metal machining suffer from short tool life when used for drilling holes in CFRP due to the presence of cobalt on the surface, insufficient thermal conductivity and the poor wear resistance of the tool material. Unlike conventional WC with microstructure prone to abrasive attack by carbon fibers, HSL's technology increases the wear resistance of the drill by using nanocrystalline grain microstructure and eliminating metal content on the surface. HSL□s WC material technology will potentially improve the tool life of carbide drills for drilling CFRP by

U of U	MMEE	Licensee	Mercury Detection	The Metallosensors, Inc. (MSI) sensing system licensed from UUtah in July 2011 provides both ultrahigh sensitivity and selectivity for detection of mercury ions. The fluorescent light from the sensor dims in the presence of mercury ions. The amount of dimming as measured with a hand-held detector gives concentration of mercury. For the first time, this method allows real-time, in-field monitoring of mercury in natural and man-made water environments. Although MSI's first focus is monitoring water in the US and China, a press release on MSI brought us an unexpected and potentially much larger market opportunity --- mercury monitoring in natural gas and petroleum industries. In partnership with Provo-based Wiltec Research Company, Inc. (WRCI)
U of U	MMEE	University	Nanocrystal Mfg.	Semiconductor nanocrystals (1-100 nm in size), commonly referred to as quantum dots, have enormous potential to improve a wide array of electronic devices. It can function as an excellent light emitter (ex. Quantum dot LEDs and displays), as well as a light absorber (ex. solar cells). However, quantum dots are challenging to produce in commercial quantities due to current expensive and small-scale fabrication methods requiring high temperatures. This impedes their use into real life applications. In contrast to existing techniques, our more cost effective patented manufacturing process operates at lower reaction temperatures. This enables easier upscaling of the synthesis while keeping high product quality and reproducibility.
U of U	LS	Licensee	Navigen	Navigen is developing D-peptide drugs that block entry of the virus HIV into human cells, thereby preventing infection. Our lead candidate called PIE12-trimer is very potent, long-lived in the bloodstream, and demonstrates a best-in-class profile against the virus developing resistance. Navigen is developing derivatives of PIE12-trimer that will persist in the bloodstream for even longer periods of time, thereby further enhancing patient compliance (willingness to take a drug on a chronic basis). In addition to being used to treat infected individuals, such a drug is well-suited for the prophylaxis market to prevent initial viral infection.
U of U	MMEE	Licensee	USBRI	We are commercializing a cost-effective, biological means to remediate acid mine drainage (AMD) wastewaters using a proprietary microbe isolated from a Montana SuperFund site. The acid-loving microbe can be readily cultured on standard media and secretes a slime that rapidly flocculates suspended iron fines in lab studies. A scaled microbial product presents a clear competitive advantage over current methods that use vast quantities of energy-intensive chemicals to neutralize and precipitate metals. Harvested slime represents a cheap, mass produced, stable, non-toxic, biological product that works below pH 4 to address challenging remediation needs in a $500 million/year addressable market. Initial proof-of-concept activities were success
U of U	LS	University	xHA Vaccine	Influenzas evolve constantly. Seasonal flu vaccine (SFV) protection is limited to viruses that are closely related to current vaccine strains, and must therefore be updated and re-administered annually. We have developed broadly cross protective xHA universal flu vaccine (UFV) antigens to circumvent inherent SFV limitations and offer the value-added advantages of extended duration and broad protection against a wide spectrum of circulating & future influenzas. In addition to these significant medical improvements, xHA UFVs will eliminate SFV strain prediction, tight manufacturing schedule and shelf life problems. The xHA UFV broad protection and extended half-life properties will also enable opening of a large new global flu vaccine marke
U of U	LS	Licensee	Viropan	AquaRing, to be marketed as an OTC product, is a novel intravaginal ring (IVR) that is self-inserted and delivers a continuous amount of fluid to the vaginal mucosa for up to 5 days to provide lubrication and moisture to treat vaginal dryness in peri- and menopausal women, and other conditions. It is designed to remain in place for several days, and during intercourse and other activities to replenish the personal moisture needs in the woman's vagina. No other product can provide such personalized vaginal dryness treatment. This product addresses all of the negatives of the current therapies of estrogen replacement, with their risk of cancer and heart disease, and OTC gels, with their messiness and short duration.

U of U	LS	University	Using DNA	ERSA (Estimating Recent Shared Ancestry) is a technology that uses the results of a single-nucleotide polymorphism (SNP) based genetic test along with a proprietary software tool to determine how closely two individuals are related. ERSA is the most powerful and accurate method currently available for detecting relationship between people. It uses a mathematical model of genetic inheritance to interpret high-density DNA genotype data, which are collected using SNP microarrays. ERSA can accurately detect relationships as distant as fifth cousins. ERSA has been published in a peer-reviewed scientific journal and is now being used in biomedical research. Sorenson Genomics intends to offer the ERSA technology as part of a DNA testing service.
USU	MMEE	University	Smart Occupancy	The Smart Occupancy Sensor is a hardware device (CMOS electro-optical/IR LED array) that can be mounted on a ceiling in an office room, where it reliably and near-instantaneously turn lights on when the room becomes occupied and turns them off when it becomes unoccupied. The unique features are: (a) ~5 second response time (compared to 15-20 minutes for motion sensors), (b) It can be configured and setup via software using a graphical user interface, (c) It does not suffer from the infamous 'hand waving' problem that motion sensors do, when users quietly sitting in a room must periodically wave their hands to reactivate the lighting system and (d) It can be upgraded via software updates for daylight aware lighting control and task control.
USU	MMEE	Licensee	WAVE	The Utah State University Research Foundation (USURF), in coordination with Wireless Advanced Vehicle Electrification, Inc. (WAVE) and international R&D institutions, has developed a wireless energy technology for vehicles. This wireless energy technology, known as Wireless Power Transfer (WPT), allows stationary or in-motion vehicles to be charged from an infrastructure embedded under the roadway. Because inductively charged vehicles can receive battery charging en route, there is a significant reduction in the required vehicle battery size. Until now, battery size has been the primary impediment towards the successful market penetration of electric vehicles (EVs). USURF's Energy Dynamics Laboratory (EDL) is the technical body conductin