Governor's Office of
Economic Development

Centers of Excellence

Jon M. Huntsman, Jr.
Governor

ANNUAL REPORT

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Fiscal Year July 2008—June 2009

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2008-2009
Centers of Excellence
Annual Report

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Executive Summary

Executive Summary

During the 2007 Legislative Session the Legislature passed, and the Governor signed into law, changes to the COE statute that permitted ongoing support of grants to companies which are Licensees of technologies developed at Utah's colleges and universities. 2008-09 was the first year that focused the program's funding on Licensee Grants and allowed the State to see this implementation more clearly.

For the 2008-09 selection process, there were two categories of eligible applicants. First were 5 University Centers which had received their first year of funding in 2007-08 and which were eligible for a second year of funding as a university Center. The second group was any company, an existing firm or a startup, which was newly licensing a university developed technology

For the 2008-09 Solicitation, 3 of 5 eligible University Centers and 36 Licensees submitted proposals for a total of 39 proposals received with total funding requests exceeding $4.5million. Of the 36 Licensee proposals, 20 of them had never received any type of Centers of Excellence funding. Of these new proposals, 11 received funding, accounting for fully half of the grants awarded. The high number of new proposals coming into the program reinforced a theory of the program; that many professors with technology that has commercial value did not want to personally perform the work of commercialization as a COE Center Director and therefore their technologies did not participate in the program, and frequently, did not therefore emerge into the marketplace.

The 13 remaining Licensee proposals were former COE university teams which were seeking Licensee Funding. These included teams which had been full Centers, and also teams which had received only Business Team funding in the past. Of these 13 proposals, 9 received funding

Of the 26 Licensee proposals, 21 Licensees were recommended for funding and 1 University Center was recommended for a second year of funding, bringing the total to 22 proposals recommended for a COE grant during the 2008-09 fiscal year.

Of the budget, $1,869,250 was allocated to direct Licensee grant funding. Another $515,750 was allocated for the one University Center as well as for funds requested to be contracted back to a companion University team by Licensees. Another $25,000 was allocated for a Business Team for the University Center. The remaining $340,000 was held back to be distributed mid-year during a "Part B" solicitation.

The largest single grant was for $275,000 to the College of Eastern Utah for their Clean Coke University Center, a second year proposal, with the remaining grants ranging down in size to $50,000. All Licensees are required to provide a 1:1 match from either industry or Federal funding, and teams from universities that grant doctoral degrees must provide 2:1 matching funds. A 1:1 match is required for all other institutions.

Of the 22 teams awarded funding, 21 signed contracts to receive their funding during the year - 20 Licensees and 1 University Center because one company awarded funding did not move for-

ward at all. Of the 20 Licensees, 15 received their entire grant award during the year by providing evidence of appropriate matching funds. 2 additional teams received partial funding during the year, but had their contracts extended to complete bringing in additional funds, such as SBIR contracts, which come in over an extended period of time, one of these received its entire funding, and the 17th company's contract expired after receiving only partial funding. The final 3 licensees had their contracts expire without receiving any funding, generally due to changes in corporate direction or structure.

The intent of this grant funding is to help accelerate the process of taking these leading edge technologies to market. Companies of any size are eligible to apply, including startups as well as existing companies that are planning to create a new product or product line from the licensed technology. The goal of these funds is to help defray the risk in taking these innovative new technologies to market in order to encourage more such licensing and the accompanying job creation that comes from exciting new market opportunities.

Part B Funding Summary 2008-09

As noted, $340,000 was held back from the initial solicitation to be distributed in a Part B solicitation mid-year. This was unusual for the program but, because of the large number of "first year" grant awardees, which were capped at $100,000 during the initial solicitation , this was deemed prudent. In April, existing Licensee Grant recipients were invited to apply for additional funds. In addition to the $340,000, carry-in funds from previous years were combined together for $500,000 available to be allocated during the part B solicitation. 6 of the 2008-09 Licensees which had shown significant progress were awarded additional funding, with three of them receiving $100,000, 2 receiving $75,000 and the sixth receiving $50,000.

2008-2009
Funded Centers

Clean Coke Technology

COLLEGE OF EASTERN UTAH

DEFINITION OF CENTER

The Center of Excellence for Clean Coke Technology at the College of Eastern Utah's (CEU) Western Energy Training Center (WETC) worked in conjunction with Terra Systems, Inc. (Terra) to continue the design, construction and operation of a modular pilot-scale facility to manufacture high-grade carbon (coke) briquettes developed from coal fines and other low-quality mining by-products. The briquetted product can be used by metallurgical and specialty carbon-reductant fuel users.

TECHNOLOGY

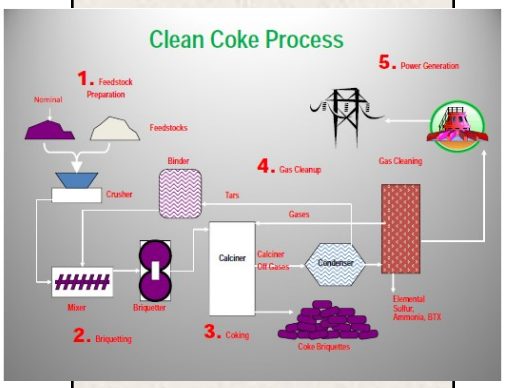
The team has made great progress during the first and second years of funding and produced green briquettes for testing by end users. The results are promising and product should be delivered to industrial users for evaluation. Design of process control systems and algorithms for the Clean Coke process has been developed. Additional IP has been developed around establishing a site-based mobile learning and training simulator which would provide the training necessary to produce the required skilled labor force. This simulator can be used by industry to advance the development of labor pools of rural applied technicians for energy processing applications.

PROGRESS

Strong partnerships were established between CEU, WETC and industry partners to complete the funded year's objectives ahead of schedule. A consortium of key companies from all industry segments has been assembled. The involvement of energy companies, investment groups, business analysts and end users provides a positive input into the direction of the technology. Members of the Center and business team are:

College of Eastern Utah – Price, UT
Western Energy Training Center (WETC) – Helper, UT
Terra Systems, Inc. – Midvale, UT
Mountain Island Energy, LLC – Soda Springs, ID
Utah Valley University – Orem, Utah
State of Utah, Manufacturing Extension Partnership - Orem, UT
WestCAMP Inc. – Salt Lake City, Utah
Utah Centers of Excellence – Salt Lake City, Utah

Imagine...



Lower the cost of current coke fuels and create a cleaner more efficient use of waste coal fines

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2008-2009 Funded Licensees (Companies)

Advanced Composite Solutions, LLC

B R I G H A M Y O U N G U N I V E R S I T Y

DEFINITION OF COMPANY

Advanced Composite Solutions (ACS), a Licensee of the Center for Advanced Structural Composites, was established to develop and manufacture products out of advanced composite technology. ACS obtained a worldwide license agreement to Brigham Young University to commercialize and manufacture the IsoTruss technology developed at the university. ACS obtained Centers Of Excellence (COE) funding and has made great advancements with effective IsoTruss manufacturing technology.

TECHNOLOGY

Advanced Composite Solutions has taken to market a premier composite 3D structural technology, IsoTruss®, that delivers extremely high strength, very light structures. ACS has successfully introduced the IsoTruss® technology through their delta 7 subsidiary by producing high-end handcrafted bicycles. The Company's long term strategy includes recreation, aviation, & manufacturing. New innovations include new tooling and manufacturing techniques permitting cost reduction while maintaining performance.

PROGRESS

Advanced Composite Solutions has used COE funding to develop advanced manufacturing technology for producing products out of the IsoTruss technology. Advanced Composite Solutions has also developed advanced manufacturing technology for lugs used to assemble IsoTruss rods/tubes together.

Imagine...

Advanced, high end road and mountain bikes created with structural IsoTruss technology.

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ContraDyn, Inc.

U N I V E R S I T Y O F U T A H

DEFINITION OF COMPANY

ContraDyn, Inc. (CDI), is a Licensee of the Center for Nanomedicine Applications in Cancer and was incorporated in 2006. Its primary focus is the development of novel targeted nanoscale drug delivery systems for diagnostic and therapeutic purposes. The proprietary technology consists of a nanoglobular delivery system capable of transporting more than one agent at a time to solid tumors in the body; e.g., contrast agents for imaging and detecting tumors, peptides for targeting tumors and chemotherapeutic agents for treating tumors without invasive surgery. CDI believes its nanoglobules are the first and only rigid, three-dimensional synthetic biomaterials developed for biomedical applications. The water-soluble drug carrier is capable of orally delivering anti-cancer drugs directly to targeted organs and tumors in unmodified forms and rapidly eliminating the drug from the normal tissues of the body.

TECHNOLOGY

CDI's initial product is a biodegradable macromolecular MRI contrast agent that can be attached to the nanoglobular delivery system and transported to solid tumors for imaging and detection. The Company's longer-term strategy is to non-invasively treat solid tumors by using its nanoglobular system to deliver therapeutic agents directly into cancerous tumor cells via targeting peptides. Features of CDI's nanoglobular technology include oral administration, specific delivery of drug to targeted sites, and rapid clearance from the normal tissues of the body. The benefits include safer and more accurate cancer detection and more effective treatment than currently available procedures.

PROGRESS

In addition to COE funds, ContraDyn received an STTR award in July 2008 from the National Institutes of Health. These combined funds have enabled ContraDyn to expand its research in polymer-based drug delivery in conjunction with the University of Utah, which has pioneered the development of polymer-based drug delivery for more than 40 years and is recognized worldwide as the pre-eminent research institution in this field.

Imagine...

Taking an oral medication to help "image" or treat tumors

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Cosmas, Inc.

B R I G H A M Y O U N G U N I V E R S I T Y

DEFINITION OF COMPANY

Cosmas, Inc., a Licensee of the Center for the Production of Nanometer Sized Metals, Alloys, Metal Oxides and Mixed Metal Oxide Powders, is commercializing a very simple process to custom produce a nearly unlimited array of high quality nanoparticles by simply varying the starting materials, not the process. Production costs will be substantially less than the competition because of the simplicity of the process. For initial market entry, Cosmas will focus on the use of its nanoparticles for production of ceramic catalyst support materials, where its unusually small particles enable unique competitive advantages. It will then expand its offerings to include nanoparticle catalysts such as 1 nm platinum or palladium particles immobilized on their support materials. And, finally, it will expand into the general catalyst market by producing nanocatalysts of various compositions for a variety of applications.

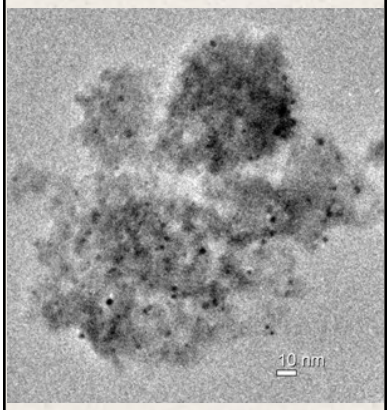
TECHNOLOGY

Cosmas, Inc.'s basic nanoparticle production process is very simple and energy conservative. It involves two simple steps: 1) mixing a common metal salt(s) powder with a base powder at room temperature to form an intermediate, and 2) heating the intermediate to a modest temperature. The nanoparticles crystallize and all of the byproducts escape as simple, common gases that can be easily trapped. Any of the metals or rare earths (about 75 chemical elements) may be used, and any number of these metals may be mixed in desired ratios to produce mixed metal oxides or metal alloys. This ability to easily vary the composition of the nanoparticles is particularly useful for customizing the nanomaterials for specific applications.

PROGRESS

Cosmas has very recently identified its initial product. They can make extremely small (2 nm), uniform sized alumina nanoparticles which can then be fused together at elevated temperatures to form a sintered, ceramic γ-alumina catalyst support material. Because they start with their preformed nanoparticles, the support characteristics are approximately twice as good as the nearest commercially available product for all of the critical product specifications.

Imagine...



A very simple process to custom produce a nearly unlimited array of high quality nanoparticles.

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CRE Energy, Inc.

B R I G H A M Y O U N G U N I V E R S I T Y

DEFINITION OF COMPANY

CRE Energy, Inc. is a spin-off company from Combustion Resources, Inc. (CR) and has maintained a close relationship with CR. The central mission of CRE has been to demonstrate and commercialize the Clean Shale Oil Surface Process (C-SOS), incorporating patent-pending CRE technology, and sub-licensed BYU technology for CO2 management. This surface process was designed to make use of commercially available components with high oil shale processing capacity, and elimination of carbon dioxide emissions. The process provides for on-site upgrading of shale oil to motor fuels.

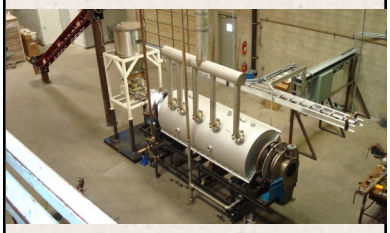
TECHNOLOGY

During the C-SOS Shale Oil Process, oil shale is liberated in an innovative, indirect-fired, rotary kiln that is simple in design with most components available from commercial sources, and capable of being fired in a way that offers high capacity and significantly lower environmental impact than existing kiln technologies. CRE Energy, working with BYU under subcontract, evaluated the BYU Baxter CO2 Removal process for cryogenic removal of carbon dioxide from the C-SOS oil shale process streams for use of sequestration. Specifically, the technical and financial merits of this BYU technology were investigated to separate CO2 from H2 in the gasification producer gas.

PROGRESS

CRE Energy, Inc. successfully completed all of the work in the four tasks for Phase I with significant achievements and results in demonstrated kiln performance, modeling of kiln processes, design of kiln oil seals, design of oil recovery and oil upgrading processes and reduction in projected water use. A new, efficient, clean surface oil shale process (C-SOS) was conceived, evaluated, and documented and a patent application was submitted.
A new indirect-fired kiln was conceived, designed, constructed, and successfully operated with demonstrated capacity and temperature control advantages and a patent application was submitted. CRE Energy presented four technical presentations at symposiums, forums, and technical conferences. CRE Energy, Inc. has completed Phase I (COE) engineering work.

Imagine...



A process that provides on-site upgrading of shale oil to motor fuels.

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GlycoMira, LLC

U N I V E R S I T Y O F U T A H

DEFINITION OF COMPANY

GlycoMira, LLC, is a development stage company that produces semi-synthetic glycosaminoglycan ethers (SAGEs) which exhibit potent anti-inflammatory activity with broad applications in human disease. GlycoMira seeks to maximize its value by increasing the breadth and depth of topical treatments for inflammatory skin disorders including the treatment of rosacea, psoriasis, eczema, actinic keratosis and acne as well as by selectively validating the therapeutic uses of SAGEs for the systemic treatment of inflammation in arthritis, diabetes, interstitial cystitis, age-related macular degeneration (AMD), and cancer metastasis.

TECHNOLOGY

The SAGE technology is a unique chemical process that converts a non-animal derived polysaccharide into soluble sulfated carbohydrate-like drugs that mimic the natural anti-inflammatory agent heparin. The SAGEs appear to be safer and to have longer biological half-lives than anti-inflammatory heparin derivatives. SAGEs block activation of the Receptor for Advanced Glycation Endproducts (RAGE) which when activated mediates inflammation. As inhibitors of RAGE, a staggeringly large number of potential uses exist for using SAGES to treat human diseases, including diabetic retinopathy and nephropathy, cancer metastasis, multiple sclerosis, sickle cell anemia, osteoarthritis, rheumatoid arthritis, cystic fibrosis, Alzheimer's, and cardiovascular and pulmonary inflammatory disorders.

PROGRESS

GlycoMira has already conducted pre-clinical animal studies that have validated efficacy and safety for the topical treatment of skin inflammation and rosacea. They have also demonstrated intravenous systemic safety as high as 100 mg/kg for one SAGE. Many of the SAGEs are active in the 2-300 ng/mL range, making them highly competitive or superior to other heparin derived materials sourced from porcine intestine. They have identified rosacea as an initial therapeutic target and are developing a first-in-class topical anti-inflammatory treatment for rosacea called Rosinex™.

Imagine...

A unique chemical process that yields drugs, that mimic the natural anti-inflammatory agent heparin, that are used in the treatment for inflammatory skin disorders.

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Heavystone Laboratory, LLC

U N I V E R S I T Y O F U T A H

DEFINITION OF COMPANY

Heavystone Laboratory, LLC, a Licensee of the Center for Functionally Graded and Designed Cemented Tungsten Carbide and Polycrystalline Diamond Composites, is a "technology company" founded upon breakthrough technology that dramatically improves the wear resistance of materials without sacrificing its impact resistance, and vice versa. This is achieved by using functionally graded cemented tungsten carbide patented by the University of Utah and licensed exclusively to Heavystone Laboratory. These materials have a multitude of applications in many manufacturing sectors including metal machining, mining, oil, gas, and geothermal energy explorations, and other industrial applications.

TECHNOLOGY

Cemented tungsten carbide is indispensable materials for many manufacturing sectors of our economy. Compared to conventional homogeneous cemented tungsten carbide, functionally graded cemented tungsten carbide made by Heavystone Laboratory's technology offers superior combinations of wear resistance, fracture toughness, and strength, and provides superior engineering performance. Therefore, these materials have the potential to drastically improve the durability and reliability of industrial tools that are currently made using conventional tungsten carbide materials and designed for metal machining, mining, oil, gas, and geothermal energy explorations, and other industrial applications where extreme wear resistance is required. A wide range of industries will see significant productivity improvements by employing the proposed process technology and the products developed using this process.

PROGRESS

Heavystone Laboratory has developed processes of manufacturing for commercial production of these products. They have formulated a Go-To market strategy and negotiated and signed a license with the University of Utah. Heavystone Laboratory has nearly completed a licensing and supply agreement with an industrial partner. The Company has formed industrial alliance and cooperative relationship with four international leading manufacturers of drilling tools, two of them headquartered in Utah.

Imagine...

A breakthrough technology that dramatically improves the wear resistance of materials without sacrificing its impact resistance.

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International Reservoir Simulation Research Institute, Inc.

B R I G H A M Y O U N G U N I V E R S I T Y

DEFINITION OF COMPANY

The International Reservoir Simulation Research Institute, Inc. was formed as a Utah C-Corporation on February 22, 2008. The sole purpose of this new company was the commercialization of the research done at Brigham Young University's International Reservoir Simulation Research Institute. The principle task of the new IRSRI, Inc. is to extend BYU's technologies to all plausible types of reservoir conditions. The BYU research work considered only idealized conditions.

TECHNOLOGY

Reservoir simulators employ computers to forecast the production rates of oil, gas, and water from oil fields. Repeated simulations, using varied production schemes, allow petroleum companies to optimize production of oil and gas from their fields. However, reservoir simulation, using current technologies, requires vast amounts of computer resources. Hence, it is both costly and time consuming. IRSRI's technologies are much faster than these conventional methods, perhaps as much as a thousand times faster than traditional methods. These new technologies may revolutionize reservoir simulation through a more widespread use of simulation for planning and field development, as well as by enabling new technologies such as geostatistical reservoir descriptions, automatic history matching, and automated optimization reservoir development.

PROGRESS

Upon receipt of funds from the State of Utah's Centers of Excellence Grant of February 6, 2009, Professor Hales was released from his teaching and research responsibilities at BYU, allowing him to pursue IRSRI Inc.'s development efforts full time. Two part-time, student employees were also hired, and a Board of Directors was established. An informal relationship with Saudi Aramco, the world's largest oil company, was established whereby advice on the design of IRSRI's products can be obtained, particularly the first product, a high speed pressure solver. Talks with ExxonMobil, the largest publicly-owned oil company and Schlumberger, the largest oil service company, are underway, which may lead to similar relationships.

Imagine...

BYU ChE

New technologies that forecast the production rates of oil, gas, and water from oil fields that are as much as a thousand times faster than traditional methods

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Larada Sciences, Inc.

U N I V E R S I T Y O F U T A H

DEFINITION OF COMPANY

Larada Sciences, a Licensee of the Center for Alternate Strategies of Parasite Removal ("**CASPeR**"), develops, manufactures and markets medical products and services based on a heated-air treatment for head-lice infestations – the core technology generated from the original Center of Excellence. Key products include a durable medical device (the LouseBuster™) and associated single-use disposable kits marketed primarily for institutional sale to healthcare professionals. Lice eradication treatment services using the LouseBuster products will also be marketed via licensed service providers. The company will sell these products and services through established medical product distributors and through a small inside direct sales force.

TECHNOLOGY

The principal company technology encompasses a new medical device and procedure to provide a breakthrough, non-chemical solution for eliminating head lice infestations. The primary product (the LouseBuster™ device), kills lice and their eggs with a large volume of heated air; no pesticides or chemicals are used. The controlled air is delivered to the patient through a special applicator that exposes lice and eggs clinging at the base of hair shafts to the air. Clinical research has demonstrated the device is very safe and effective, killing virtually all eggs and a majority of hatched lice.

PROGRESS

With the help of COE funding, the Company has accomplished two complete product design cycles and is now completing the final design revisions and testing to enable full-scale manufacturing for market entry. The team greatly improved the original University device concept and the disposable applicator for improved performance, reduced manufacturing cost, and power efficiency, and integrated many new design improvements, including, a rugged, molded plastic housing and simple electronic interfaces for users. As of the close of FY 08-09, the team has also completed all of the clinical investigations necessary to submit a 510(k) pre-market notification to the FDA, and received the first 510(k) clearance from the FDA in March of 2009. In addition, the company completed additional rounds of follow-on equity funding from accredited private investors to continue to fund the company's progress.

Imagine...

A very effective non-chemical solution for eliminating head lice and other parasites.

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NeuroAdjuvants, Inc

U N I V E R S I T Y O F U T A H

DEFINITION OF COMPANY

NeuroAdjuvants, Inc. (NAI) was formed to develop and commercialize novel therapeutics for the treatment of neurological disorders. The initial focus of NAI is to identify novel therapies for pain and epilepsy. NAI's proprietary technologies were developed at the University of Utah. These technologies have been exclusively licensed from the University of Utah by NAI.

TECHNOLOGY

NAI has invented novel technologies that facilitate the movement of neuropeptides across the blood-brain-barrier (BBB) when administered systemically. Enhancing the pharmacological and pharmaceutical properties of peptide analogs to enable them to penetrate the BBB has been long sought by drug developers. The Company has initially focused on modifying neuropeptides that have anticonvulsant activity when administered directly into the brain, but lack such properties following systemic delivery. The first neuropeptide that the Company has targeted is galanin, an endogenous neuropeptide in the central nervous system that has been recognized as a potential anticonvulsant agent but is limited by its marginal metabolic stability and inability to cross the BBB.

PROGRESS

NAI has advanced its galanin analog platform into lead optimization in models of pain and epilepsy and completed initial in vivo toxicity studies. These studies provided early indications of potentially dose-limiting side effects. NAI isolated the toxic moiety and began generating and testing an improved library of compounds. NAI also showed the depth of the technology platform by advancing an additional neuropeptide, Neuropeptide Y, into lead optimization in both pain and epilepsy. The data provide NeuroAdjuvants, Inc. with 4 publications in peer reviewed journals.

Imagine...

NeuroAdjuvants

Novel technologies that facilitate the movement of neuropeptides across the blood-brain-barrier.

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Sera Prognostics, Inc.

BRIGHAM YOUNG UNIVERSITY/UNIVERSITY OF UTAH

DEFINITION OF COMPANY

Sera Prognostics, Inc. is using a novel serum proteomics technology to identify and commercialize biomarkers from blood samples of pregnant women to predict those at risk for preterm birth (PTB), preeclampsia (PE) and other pregnancy complications. Adequate advance warning of women at risk for these complications would permit clinicians to administer a number of medical interventions to treat the mother and improve the outcome of the baby.

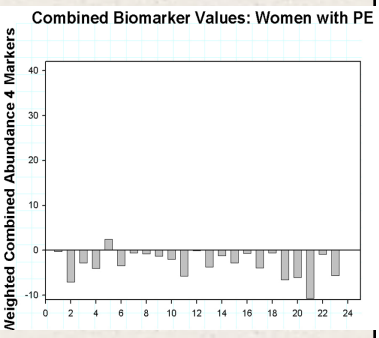
TECHNOLOGY

Sera's first-of-kind serum proteomics approach couples capillary liquid chromatography (cLC) separation technology with electrospray ionization time-of-flight mass spectrometry (MS) to measure molecular mass. High abundance, non-informative proteins are removed by a precipitation process to allow cLC separation and to make available small protein-bound peptides. The proteomics platform can observe 4,000 to 5,000 different peptides, small proteins and other molecular species in a single blood specimen in real time. These molecules may be identified by their amino acid sequences through an additional more sensitive two-sector mass spec sequencing process. Using this powerful proteomics platform, the Company is able to identify biological molecules that differ quantitatively between patients with a disease and those who have no medical complication.

PROGRESS

Sera Prognostics, Inc. has completed analysis of its mass spectroscopy data base for PTB and PE, identifying additional biomarkers that elevate the predictive level of PTB to 90% sensitivity (% of patients with disease who test positive) and 81% specificity (% without disease who test negative), and raise the predictive value of PE to 96% sensitivity and 100% specificity. The Company entered into collaborative discussions with three of the four largest CLIA references lab companies in the U.S.: ARUP in Salt Lake City, LabCorp in North Carolina, and Quest Diagnostics in New Jersey. The Company has presented, published and submitted scientific publications and conducted physician market research.

Imagine...



A novel technology that identifies biomarkers from blood samples of pregnant women to predict those at risk for preterm birth and other pregnancy complications.

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STEDI, LLC

U T A H S T A T E U N I V E R S I T Y

DEFINITION OF COMPANY

STEDI, LLC works with school districts across the country to recruit, train, and retain substitute teachers. STEDI is the leader in training school districts on the management of substitute teaching. There is no other university based training program available across the country, in England, or Canada.

TECHNOLOGY

The Substitute Teaching Institute at Utah State University developed research-based training materials to help school districts train and retain their substitute teachers. The training materials provide practical and effective skills for individuals to become successful and effective substitute teachers in the classroom. STEDI implements these university-developed strategies by marketing them to school districts.

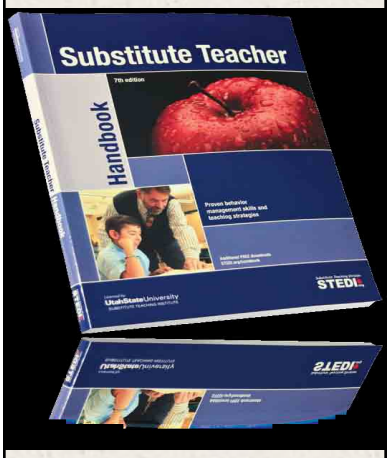
PROGRESS

STEDI worked with over 1,000 school districts from August 1, 2008 and June 30, 2009 in setting up training for their substitute teachers using the training programs developed at USU. STEDI has also updated and adapted the materials to produce the following:

- A new seventh edition of the Substitute Teacher Handbook
- Revamped the online courses
- Created two additional online courses

Derivative work was also developed by STEDI based on the research conducted at the Substitute Teaching Institute at Utah State University

Imagine...



Research-based training materials that provide effective skills for individuals to become successful substitute teachers.

Geoffrey G. Smith
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Logan, Utah
84321
435-752-9486
geoffreygsmith@gmail.com

T-Splines, Inc.

B R I G H A M Y O U N G U N I V E R S I T Y

DEFINITION OF COMPANY

T-Splines, Inc. develops surface modeling software with optimal control and full industry standard compatibility for industrial designers and computer-aided design (CAD) professionals. The Company develops and markets end-user applications and software development libraries. T-Splines is used throughout CAD, especially in architectural, marine, jewelry, and consumer products design. The Company is dedicated to establishing T-Splines as a new industry standard in industrial design and CAD/CAM/CAE applications.

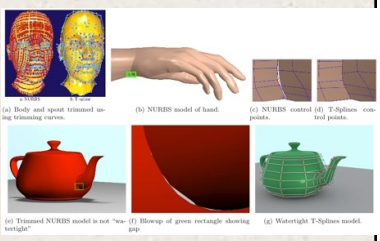
TECHNOLOGY

T-Splines' innovative software is based on the patented T–Splines technology, a new way of representing geometry that allows designers and engineers to add detail and control 3D models in ways that were previously impossible. T-Splines allows designers to add detail only where necessary, create non-rectangular topology, easily edit complex freeform models, and maintain compatibility with other industry standard technologies. T-Spline technology currently in development called Trimless T-Splines Intersection (TTI), provides for the first time a solution to a decades-old problem of interoperability between CAD packages, providing a single CAD model that can be compatible with all parts of the design, analysis, and manufacturing processes. This interoperability problem is costly in many industries, and has been estimated to cost the US automotive industry alone over a billion dollars annually in lost productivity.

PROGRESS

T-Splines, Inc. recently released version 2 of its T-Splines for Rhino plugin. This plugin was named the "Pick of the Week" by prominent industry publication Desktop Engineering shortly after its release and has helped increase the revenue of the company nearly 100%. In addition to continuing to sell, market, and improve the T-Splines for Rhino plugin, the company also is continuing basic research on further applications of the T-Spline technology.

Imagine...



Software that allows designers and engineers to add detail and control 3D models in ways that were previously impossible.

Matt Sederberg
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84606
801-841-1234
matt@tsplines.com

Thermal Management Technologies, Inc.

U T A H S T A T E U N I V E R S I T Y

DEFINITION OF COMPANY

Thermal Management Technologies Inc. (TMT), a Licensee of the Center for Thermal Management Technologies, is fundamentally an innovative R&D operation focused on commercializing certain technologies originating with USU's Space Dynamics Laboratory in addition to new technologies all related to thermal management. The business plan is to keep the core company largely undiluted by investment capital while creating separate companies each based on a particular TMT technology.

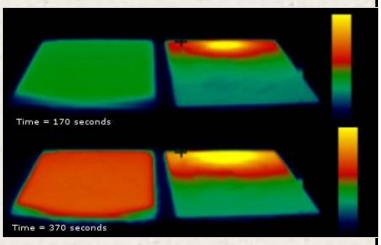
TECHNOLOGY

Channel Panel is the name of a technology that incorporates very robust heat spreading capability into structural panels. This technology, licensed to TMT by USU Research Foundation, will probably find primary application in the micro gravity environment of space with other terrestrial specialized applications. The Isothermal Condensation and Evaporation (ICE) technology, currently under development at TMT, is targeted at a number of applications including cooling of large battery packs, electric motors, controllers, data centers, and printed circuit boards. The Flexible Thermal Link, another TMT technology, has primarily found specialized application in satellites but other commercial markets are also being considered.

PROGRESS

TMT was formed as a new for-profit company and as the first "spin-out" in 50 years from USU's Space Dynamics Laboratory. They have successfully drafted a license and cooperative agreement with USU Research Foundation. TMT was granted an SBIR Phase I award from the U.S. Air Force Research Laboratory to develop modular isothermal panels for rapid response spacecraft based on the Channel Panel technology in the amount of $100,000. They have also secured a contract for $75,000 from EcoAirtec, accepted a $20,000 contract from USURF to further develop a thermal pulse flow meter with no moving parts, and awarded $100,000 from the COE as a licensee of university developed technology. The COE award was essential to TMT survival and enabled the assembly of a capable technical and business team.

Imagine...



A technology that incorporates very robust heat spreading capability into structural panels.

Forrest N. Fackrell
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435-797-4642
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Thermimage, Inc.

U N I V E R S I T Y O F U T A H

DEFINITION OF COMPANY

Thermimage, Inc. has developed an innovative medical device that provides a safe and noninvasive way to detect pediatric vesicoureteral reflux or VUR (urinary reflux), a common and under-diagnosed condition where urine flows back up into the kidneys from the bladder, exposing them to infection. Early diagnosis prevents kidney damage and lowers the risk of long term complications. Thermimage has raised $1.5MM to date for technology development and is on track for US/EU market launch in 2011.

TECHNOLOGY

Thermimage has invented a noninvasive replacement for the current traumatic procedure used to detect VUR and prevent kidney damage in 4MM children annually. Twelve patents on the technology have either been issued or are pending, with many more in process.

PROGRESS

The company remains on track to fully commercialize the "Thermaflux Scanner" technology by mid 2011. To achieve this goal, a specific project plan is in place that includes the following milestones:

- Phase II—Animal Testing—Q4 2009 (November)
- Phase III—Animal Testing—Q2 2010 (April)
- Phase IV—Human Testing Grade 3-5 reflux Q2 2010 (June)
- Phase V—Human Trials to demonstrate sensitivity and specificity Q3 2010 (September)
- File 510k with FDA Q3/4 2010

Imagine...

An innovative medical device that provides a safe and noninvasive way to detect pediatric VUR.

Douglas G. Turnquist
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Torion Technologies, Inc.

B R I G H A M Y O U N G U N I V E R S I T Y

DEFINITION OF COMPANY

Torion Technologies is a privately held company and is the technology leader in miniaturization of gas chromatography and mass spectrometry instrumentation, as well as complimentary accessories. Torion offers a unique blend of technical services and product commercialization. More broadly, Torion's purpose is the development of miniaturized, hand-portable measurement instrumentation for chemical and biological analysis in the field. Specific areas of expertise include all forms of mass spectrometry and ion mobility spectrometry, all forms of chromatography and microseparations, solid phase microextraction and sample preparation, statistics-based analyses and data processing algorithms, rapid detection of chemical threat agents, and thermolytic catalysis for biomarker identification of biological threat agents.

TECHNOLOGY

Torion's product line includes the world's smallest and most portable gas chromatograph-toroidal ion trap mass spectrometer (GC-TMS) instrument, the GUARDION®-7, and its companion CHROMION™ operating software. Torion also developed the CUSTODIAN® line of novel solid phase microextraction (SPME) fiber-based custody sampling syringes used as a sample preparation and sample introduction technique for the GUARDION®-7.

PROGRESS

Torion Technologies Inc. finalized an exclusive technology license agreement for more than 10 patents and patent applications with Brigham Young University in March 2008. Torion originally had been operating for the past several years as a contract research and development company, and is now rapidly moving into a product commercialization phase that includes manufacturing, marketing, and sales activities for GC-TMS based chemical and biological compound detectors. During the Utah COE contract period, Torion initiated commercial sales of the GUARDION-7 GC-TMS, CHROMION software and the CUSTODION line of SPME sampling syringes to strategic markets including national defense and security, forensics, environmental, petroleum, and foods/flavors. Torion is working to develop new commercial applications of the GC-TMS technology.

Imagine...

Miniaturized, hand-portable measurement instrumentation for chemical and biological analyses.

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VisTrails, Inc.

U N I V E R S I T Y O F U T A H

DEFINITION OF COMPANY

VisTrails, Inc. is a Licensee of the Center for the Management of Provenance and Exploratory Workflows.

VisTrails Inc specializes in developing state-of-the-art technology to capture and manage provenance information. It provides software and services to support the provenance enabling of complex applications used in a wide-range of industries.

TECHNOLOGY

The company has developed a provenance management infrastructure that can be combined with and extend existing applications. Using this patent-pending technology, the team has developed provenance plug-ins for a number of software tools including industry leading creation software such as Autodesk's Maya, Kitware's ParaView, and VisIt.

PROGRESS

In 2009, the company released its first commercial product, the Provenance Explorer for Maya, which was launched during SIGGRAPH. In addition, Kitware is planning to release Provenance Explorer for ParaView bundled with ParaView 3.6.2.

VisTrails has also received an SBIR Phase II award from the Department of Energy to develop a provenance SDK. Using this SDK, users/companies will be able to develop their own provenance plug-ins.

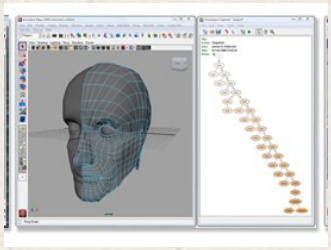
Besides work on the SDK, in 2010 the team will focus on disseminating the technology and in particular, perform a targeted marketing campaign aimed at popularizing the Provenance Explorer for Maya in the education community.

The Board of Directors is currently managing the company and is searching for an experienced CEO.

Receiving the remaining COE funds has been critical for VisTrails because SBIR funds cannot be used for marketing but COE funds can be used for this critical function.

Imagine...

If you could "reverse" changes you had made to a picture or game and go "back" to any point in time...



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Wastewater Compliance Systems, Inc.

U N I V E R S I T Y O F U T A H

DEFINITION OF COMPANY

Wastewater Compliance Systems, Inc. (WCS), a Licensee of the Center for Water Treatment Technology, sells a patented, submergible, igloo-shaped aeration product called Poo-Gloo that dramatically enhances the efficiency of wastewater lagoons. Our economical product is an easy-to-install retrofit solution for lagoon operators faced with compliance, cost, and capacity issues.

TECHNOLOGY

Poo-Gloos increase efficiency and capacity of wastewater lagoons by providing a large surface area of aerated bio-film in a dark, warm environment. Biological conditions created within each Poo-Gloo promote growth of beneficial microbes that accelerate nutrient removal and enhance remediation. Although seemingly simple, Poo-Gloos are a disruptive and energy efficient solution to a difficult problem in small and medium size cities and towns, as well as globally in developing countries and other areas where expensive, complex, hard to maintain conventional sewage treatment plants are not feasible. WCS, Inc. conducts scaled technology and product evaluations in test beds. The tests are conducted in large tanks under controlled conditions using live municipal waste streams to evaluate product performance and to develop protocols to support commercial field activities.

PROGRESS

WCS is currently collecting and analyzing operating data from Utah beta sites to document product performance to fulfill regulatory requirements for new equipment to support future sales. The Company is also expanding its sales base to neighboring states to build sustainable core operations, and to comply with regulatory requirements in other states. The Company outsources pure R&D activities to the University of Utah via sponsored projects to investigate new scientific discoveries in lagoon wastewater treatment technology. Their UU sponsored research created two new patent applications in late 2008, and will provide at least two additional patent filings during 2009. WCS also contracts with UU to provide ongoing analytical lab testing and support services for their municipal test beds and commercial field sites.

Imagine...

An aeration product that increases the efficiency and capacity of wastewater lagoons.

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2008-2009 Awardees Which Did Not Receive Funding

2008-2009 Awardees Which Did Not Receive Funding

Under some circumstances, Licensees which are awarded funding under the COE selection process do not end up receiving that funding. Being awarded funding means that a licensee or university Center is approved to receive funding, pending compliance with the terms of the contract and program. There are a number of reasons why a firm may be receive an award, but not subsequently comply with program requirements and therefore not receive the funding. In some cases, the Licensee is unable to secure adequate matching funding (one dollar in outside funding for each dollar of COE grant funding) or their funding sources are not eligible to count as matching funds. Sometimes firms change strategies and sometimes, as happens with startups, they simply exit the business. Below is a list of awardees which were offered awards but did not receive funding during 2008-09.

1. **CastleRock Engineering, Inc.,**
   (Licensee of the Center for Control of Flows in Manufacturing)
2. **Millenniata, Inc.**
3. **RUReady, Inc.**
4. **Wasatch Nanopore Sensors, LLC**
   (Licensee of the Center for Nanopore Sensor Technologies)

Program Description

PROGRAM DESCRIPTION

Utah Centers of Excellence Program

Description of Centers Recommended for Funding in Fiscal 2008-2009

The purpose of the Centers of Excellence Program is to accelerate the commercialization of promising technologies that have strategic value for Utah. The end goal of the COE Program is to help drive economic development and job creation.

"Our Job is Jobs"

2008-09 Licensee Grants

The Centers of Excellence program has, for over 20 years, provided grant funding to professors in our colleges and universities to help them take their technologies to market to drive job creating products and businesses in our economy. Historically, the COE statute only permitted grants to Utah universities, however, in 2007 the Legislature passed and the Governor signed into law, changes to the COE statute that permits grants to companies who license technology developed at Utah's colleges and universities, including startups as well as existing companies who plan to create a new product or product line from the licensed technology. After these legislative changes in 2007, Licensees were solicited from all existing Centers to broadly evaluate the potential of grants to Licensees.

During the 2007-08 fiscal year, approximately half of the grants and funding went to Licensees. The excellent progress made by these companies in creating jobs and expanding the success of their businesses and strengthening Utah's economy led to this year's program. The program has been refocused to help provide funding to the Licensee, the company that is licensing a university-developed technology. For the 2008-09 selection process, there were two categories of eligible applicants. First were 5 University Centers which had received their first year of funding in 2007-08 and who were eligible for a second year of funding as a university Center. The second group was any company, an existing firm or a startup, which was newly licensing a university developed technology

For the 2008-09 Solicitation, 3 of the 5 eligible University Centers and 36 Licensees submitted proposals for a total of 39 proposals received, of which 21 Licensees were recommended for funding and 1 University Center recommended for a second year of funding, bringing the total to 22 proposals recommended for a COE grant this year.

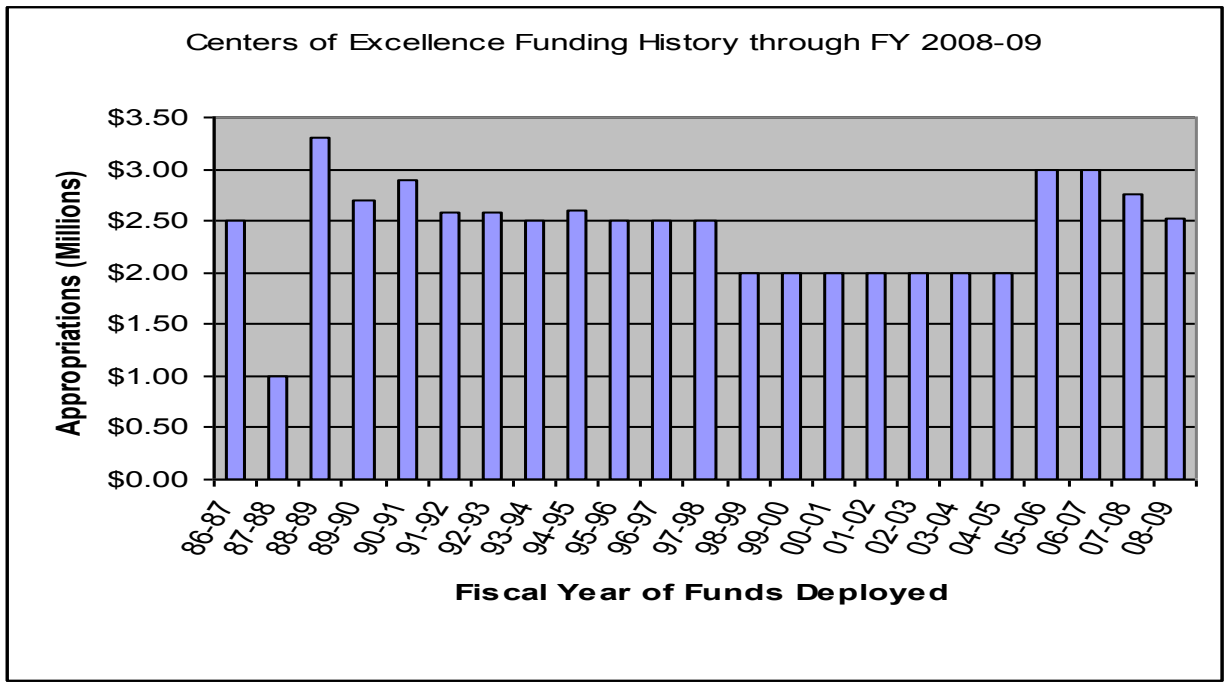
The intent of this grant funding is to help accelerate the process of taking these leading edge technologies to market. Companies of any size are eligible to apply, including startups as well as existing companies that are planning to create a new product or product line from the licensed technology. The goal of these funds is to help defray the risk in taking these innovative new technologies to market in order to encourage more such licensing and the accompanying job creation that comes from exciting new market opportunities.

Following the continued encouragement of the Legislature and reflecting the ongoing challenges of transitioning university developed technologies out of the lab and into industry, for the 2008-09 fiscal year and later, the COE program will follow the Licensee Grant provisions of the COE legislation and continue as a grant program but will focus the program only on Licensee (company) grant funding.

Beginning in 2008-09, any company which is headquartered in Utah or has a significant divisional headquarters in Utah is eligible for the Centers of Excellence grant and is the focus of the program. A startup company or an existing, ongoing concern, which decides to newly license a technology developed at, and licensed from, one of Utah's colleges or universities and which will create jobs for Utah citizens, is eligible to apply for a grant. The competitive process for Centers of Excellence Grants is intended to encourage and develop technologies that create Utah jobs from the commercialization of the technology.

In addition, because the emphasis going forward is to fund the Licensees, there will no longer be a need for a Business Team Program. For 2008-09 one Business Team Member will continue to support the one University Center.

HISTORICAL FUNDING



This graph shows the history of funding for the COE program

2008-09 CENTER SELECTION PROCESS

The Centers of Excellence program issued a solicitation in early 2008 with a proposal deadline of March 10, 2008 and the selection review process taking place in April and May. The review process includes an in-person presentation by the proposing team in front of members of the Centers of Excellence Advisory Council, who are volunteer experts from Utah's technology business community. Final selections are made in late May, presented to the GOED Board in June and funds are available beginning in July. For the 2008-09 fiscal year funding recommendation, the Centers of Excellence Program continued to refine the selection process.

The COE Advisory Council is a group of seasoned technology industry executives, CEOs and CTOs, VPs and Senior Directors, who are interested in helping Utah and the Centers of Excellence Program succeed. This year there were 28 volunteer reviewers on the Advisory Council, 5 of them new to the program for 2008-09. For the 2008-09 selection year, the COE Advisory Council conducted 39 reviews of 3 University Center proposals and 36 Licensee Grant proposals. The funding requests this year were in excess of $4.5million.

To enhance the selection process and position the selection process for scalability, the program modified the selection process. This year each proposal was divided into one of three categories matched by 3 sub-committees of the Advisory Council. These sub-committees are:

- Materials / Manufacturing / Environmental / Energy
- Information Technology / Communications / Aerospace/Defense / Electronics/Electrical Devices
- Life Sciences

Each category was assigned a day of meetings for our Reviewers. Each proposing team was then assigned a 30 minutes time slot in the morning. For the first half of the day, the sub-committee members of the Advisory Council listened to back-to-back proposal presentations by the proposing teams. After all of the teams had presented to at least 2-4 Advisory Council members, the sub-committee as a whole sat down together for the first phase review and prioritization.

During this process, the sub-committee members discussed each proposal, evaluated the proposed funding request, and made the initial recommendations for funding and amount of funding. Each proposal that was recommended for funding also received a score on a scale of 0-5 (5 is high score). The average of the reviewers' score was assigned to the proposal, and then each sub-committee's selections were ranked by score. This process narrowed the field of proposals from 39 down to 26 which were considered by the full Advisory Council. 10 proposals from the MMEE sub-committee, 8 proposals from the IT sub-committee and 8 from the Life Sciences sub-committee were forwarded to the full committee for review.

On May 15, 2008, the COE Advisory Council met as a group to review the 26 proposals forwarded from the sub-committees. The Council reviewed the "top 6" recommendations from the sub-committees, 2 from each group and voted to accept 4of these as a group, with the remaining 2 selected for further discussion on the amount of funding and ultimately selected for funding. After recommending the top 6, the Council worked its way in priority order through

the list of sub-committee recommendations. Of the 26 considered, 22 were recommended for funding for 2008-09.

During this process, the members of the Advisory Council in attendance either accepted the committee's recommendation, or modified the recommendation. Each of these Council recommendations was accepted by a majority vote, and the process of discussion and recommendation continued until a majority vote was reached for each proposal. Each proposal included whether or not the proposed application was recommended for funding, and the amount of funding recommended for the Licensee and, if requested by the proposing team, the amount of funding recommended to be contracted back to the university team.

Finally, the Council also reviewed the list of 13 proposals which had been recommended NOT to be funded by the sub-committees and accepted that list as not recommended for funding. After the recommendations for funding for all of the selected teams and their associated university contracts plus $25,000 for one business team for the one University Center which was recommended for funding, $340,000 was remaining. The Council proposed that these funds should be distributed after a mid-year convening of the Council, probably by conference call or short meeting, to those teams receiving grants for the 2008-09 fiscal year which show significant progress or specific needs/milestones.

This was the first year that this so-called "speedpitch" process was used, combined with the ongoing sub-committee approach. All feedback on this updated approach was that it was very successful. It provided enough time for the proposing teams to communicate their technology and their business plan and strategy, while allowing the Council members to see a wider array of the proposing teams and also to prioritize them within areas of expertise before the final Council meeting.

The key requirements for funding this year included: The potential for a technology to create a significant Utah employer, whether the proposing team or management team was credible to accomplish the needed commercialization activities, and for teams already in the program, whether the program was "on track" and meeting key milestones.

Funding Summary

For the 2008-09 selection process, the Program received a total of 39 proposals with a total of 39 reviews. There were 36 Licensee proposals and 3 University Center proposals and total funding requests exceeding $4.5million.

The final recommendations for funding include 21 licensees, and 1 university Center. This totals 22 teams selected for support. Of the 5 University Teams which were eligible to apply for second year funding this year, 3 applied for funding, one was not yet ready and one chose to have their Licensee apply instead. Of these 3 which applied, one was selected for renewal for 2008-09. In addition, another 3 proposals were from Licensees which had received previous funding from the COE program, and of these, one received funding.

Of the 36 Licensee proposals, 20 of them had never received any type of Centers of Excellence funding. Of these new proposals, 11 received funding, accounting for fully half of the grants awarded. The high number of new proposals coming into the program reinforces a hypothesis of the program; that many professors with technology that has commercial value did not want to personally perform the work of commercialization as a COE Center Director and therefore their technologies did not participate in the program, and frequently, did not therefore emerge into the marketplace.

The 13 remaining Licensee proposals were former COE university teams which were seeking Licensee Funding. These included teams which had been full Centers, and also teams which had received only Business team funding in the past. Of these 13 proposals, 9 received funding

Of the budget, $1,869,250 was allocated to direct Licensee grant funding. Another $ 515,750 was allocated for the one University Center plus for funds requested to be contracted back to a companion University team by Licensees. Another $25,000 was allocated for a business team for the University Center. The remaining $340,000 is to be distributed mid-year as previously described.

The largest single grant was for $275,000 to the College of Eastern Utah for their Clean Coke University Center, a second year proposal, with the remaining grants ranging down in size to $50,000. All Licensees are required to provide a 1:1 match from either industry or Federal funding, and any university team which receives funding which also grants doctoral degrees must also provide 2:1 matching funds, with all other institutions responsible for a 1:1 matching requirement.

Fund Allocation

Funds Allocated by the Legislature	$2,750,000
Amount to Direct University Center Funding	$ 515,750.00
Licensee Funding	$1,869,250
Business Team Funding for Centers	$ 25,000.00
Funding to be allocated mid-year to teams with exceptional progress and special situations	$ 340,000.00

Distribution of Grants by University

	Centers	Licensees	Total
BYU	**0**	**8**	**8**
USU	**0**	**3**	**3**
UU	**0**	**10**	**10**
CEU	**1**	**0**	**1**
Total Supported Teams	**1**	**21**	**22**

Summary Statistics on Applicants and Awardees

Total Number of University Proposals for 2008-2009	**3**
Total Number of Licensee Proposals	**36**
Total Number of Funding Opportunities	**39**
Existing University Centers Seeking Renewal	**3**
Existing University Centers Renewed	**1**
Existing Licensees Seeking Renewal	**3**
Existing Licensees Renewed	**1**
Former University Teams seeking Licensee support	**13**
Former University Teams with Licensees Funded	**9**
Proposals from Licensees new to COE	**20**
New Licensees Funded	**11**
Proposals based on BYU technology	**10**
Centers + Licensees funded from BYU	**8**
Proposals based on U of U technology	**18**
Centers + Licensees funded from U of U	**10**
Proposals based on USU technology	**9**
Centers + Licensees funded from USU	**3**
Proposals from SUU	**1**
Centers funded from SUU	**0**
Proposals from CEU	**1**
Centers funded from CEU	**1**
Centers + Licensees Funded	**22**
Existing University Centers Renewed	**1**
Licensees Funded	**21**
Total of Centers + Licensees Supported for 2008-09	**22**
Total of Technologies support for 2008-09	**22**
Graduating Centers at end of 2007-2008year	**9**
Existing (07-08) Recipients not renewed for 08-09	**5**
2007-08 Teams that did not apply for 08-09	**4**
Licensees and Centers by Technology Area	
Mat./Mfg./Energy/Environment Total	**10**
Inf. Tech / Aerospace/ Defense/ Electronics Total	**5**
Life Sciences	**7**
Total Recommended for Funding	**22**

Part B 2008-09 Grant Description

After the primary 2008-09 solicitation was over, the COE program still had $340,000 in funds that were uncommitted. This funding, combined with one contract that was awarded, but not signed by the grant recipient, plus a small amount of funding that was carried in from previous years, a total of $500,000, was designated to be put to work in a 2008-09 Part B solicitation. This solicitation was limited only to existing 2008-09 Licensee grant recipients, and was designed to help accelerate the progress of the most promising teams.

Of the 22 original teams which were granted awards in 2008-09, one was a university team, which was not eligible for the Part B funding, one declined their contract, and three others were not eligible either due to the total amount of funding they had received from the Centers of Excellence program (in excess of $500,000 per technology), or had received equity funding in excess of $2 million. Of the remaining 17, 10 submitted a proposal for the Part B solicitations. Others who did not propose generally did not have sufficient matching funds in place to be received on or before June 30, 2009, a requirement of the Part B solicitation.

2008-09 Part B Selection Process

For the 2008-09 Part B solicitation, the majority of the Members of the COE Advisory Council who participated in the primary 2008-09 solicitation also participated in reviewing the Part B teams. Teams were asked to submit a 2 page proposal demonstrating their progress to date, as well as various letters of support and a summary of key items such as equity and grant funding received to date.

The COE team conducted sub-committee reviews by conference call due to the relatively small number of proposals to review: 2 in Information Technology, 3 in Life Sciences and 5 in Materials/ Manufacturing/Energy/Environment. After each proposal was reviewed by the sub-committee, on Thursday April 16, 2009, the group met in person at the Capitol to do a final review and prioritization.

Of the 10 proposing teams, 6 teams were recommended to receive awards ranging from $50,000 to $100,000 and totaling $500,000. Four other proposing teams were not recommended for additional funding. In one case this was because the company already had significant revenue from the licensed technology, in the other cases, the Council members were concerned that the companies had not made enough significant commercial progress to warrant further funding. All licensees are required to provide a 1:1 match in funds from non-loan sources.

Distribution of Party B Grants by University

	Licensees
BYU	**1**
USU	**1**
UU	**4**
Total Supported Teams	**6**

Funding Recipients for the 2008-09 Part B Solicitation Centers of Excellence Program

Licensee **(Center -University)**
CEO or Principal **Years Funded to Date** **Initial Award Amount**
2008-09 Part B Award Amount:

COSMAS, Inc. (Licensee of Center for the Production of Nanometer Sized Metals, Alloys, Metal Oxides & Mixed-Metal Oxide Powders - BYU)
Lynn Astle, CEO **New as company** **$100,000**
$75,000

GlycoMira, LLC. **(New Licensee – U/U)**
Tim Miller, CEO and Thomas P. Kennedy, MD and Glenn D. Prestwich, PhD, Co-founders and Co-inventors **New as company** **$100,000**
$75,000

NeuroAdjuvants, Inc. **(New License – U/U)**
Theodore Stanley, M.D., Pres. & CEO **New as company** **$100,000**
$100,000

STEDI, LLC **(New License – USU)**
Geoffrey G. Smith (Key contact) **New as company** **$100,000**
$50,000

Thermimage, Inc. **(New License – U/U)**
Douglas Turnquist, President & CEO **New as company** **$100,000**
$100,000

Wastewater Compliance Systems, Inc. (Licensee of Center for Water Treatment Technology -U/U) Fred Jaeger, President **1st Year as Licensee** **$100,000**
$100,000

The Part B additional funding is included in the overall Funding Summary for the 2008-09 Fiscal Year.

2008-2009 Financial Summary

The Financial Summary is a summary of the information provided by each Center in their annual report to the program and the funding summary is based on the funds granted during the fiscal year. For reference, "Total Funding" means COE funding awarded since starting with the program, "Patents Pend...." means patents newly filed during the fiscal year, "New Patents (Issued)" refers to those issued during the fiscal year and "Licensees" refers to companies which licensed the technology from a former Center of Excellence, while those marked "N" are Licensees of other university developed technology..

University	Funded University Centers	08-09 Funding	Total Funding	Total Disbursed	08-09 Matching	Patents Pend. 08-09	New Patents (Issued)	Spin-Offs/ Licensees
CEU	Clean Coke Technology	275,000	400,000	400,000	550,000	NA	NA	1
University	**Funded Companies**	**08-09 Funding**	**Total Funding**	**Total Disbursed**	**08-09 Matching**	**Patents Pend. 08-09**	**New Patents (Issued)**	**Spin-Offs/ Licensees**
BYU	Advanced Composite Solutions, LLC	100,000	100,000	100,000	1,985,000	NA	NA	Y
UU	ContraDyn, Inc.	100,000	100,000	100,000	100,000	NA	NA	Y
BYU	Cosmas, Inc.	175000	175000	175,000	312,500	NA	NA	Y
BYU	CRE Energy, Inc.	100,000	100,000	100,000	100,000	NA	NA	NA
UU	GlycoMira, LLC	175000	175000	175000	293,500	NA	NA	N
UU	Heavystone Laboratory, LLC	120,000	120,000	120,000	90,000	NA	NA	Y
BYU	International Reservoir Simulation Research Institute	50,000	50,000	50,000	50,000	NA	NA	N
UU	Larada Sciences, Inc.	80,000	250,000	250,000	80,000	NA	NA	Y
UU	NeuroAdjuvants, Inc.	100,000	100,000	100,000	662,200	NA	NA	N
BYU/UU	Sera Prognostics, Inc.	100,000	100,000	100,000	540,000	NA	NA	N
USU	STEDI, LLC	100,000	100,000	100,000	100,000	NA	NA	N
BYU	T-Splines, Inc.	100,000	100,000	100,000	100,000	NA	NA	N
USU	Thermal Management Technologies, Inc.	100,000	100,000	100,000	135,300	NA	NA	Y
UU	Thermimage, Inc.	100,000	100,000	100,000	1,508,000	NA	NA	N
BYU	Torion Technologies, Inc.	100,000	100,000	100,000	2,336,020	NA	NA	N
UU	VisTrails, Inc.	200,000	200,000	137,500	137,500	NA	NA	Y
UU	Wastewater Compliance Systems, Inc.	100,000	100,000	100,000	356,618	NA	NA	Y

If a company which received funding is a spin-off or licensee of a former University Center of Excellence, then it is marked as "Yes". If the company is a university licensee of a technology that was not supported by the COE program in previous years, it is marked as "No".

2008-2009 Awardees Which Did Not Receive Funding

University	Funded Companies (cont.)	08-09 Funding	Total Funding	Total Disburse-ment	08-09 Matching	Patents Pend. 08-09	New Patents (Issued)	Spin-Offs/ Licensees
USU	CastleRock Engineering, Inc.	75,000	75,000	0	NA	NA	NA	NA
BYU	Millenniata, Inc.	85,000	85,000	0	NA	NA	NA	NA
UU	RUReady, Inc.	100,000	100,000	0	NA	NA	NA	NA
UU	Wasatch Nanopore Sensors, LLC	100,000	100,000	0	NA	NA	NA	NA

2009-2010
Funded Centers

Funding Recipients for the 2009-10 Centers of Excellence Program

Funding Recipients which are Licensees (Companies) of Center Supported, University Developed Technologies

Total Proposals – 28 Submitted – 13 Awarded funding:
12 Second Year Submissions– 8 Awarded funding:
16 First Year Submissions-5Awarded funding:

BYU – 4 Awarded Funding (9 Submitted)
USU – 1 Awarded Funding (2 Submitted)
UU – 8 Awarded Funding (16 Submitted)
CEU – 0 Awarded Funding (1 Submitted)

8 Second Year Proposals Awarded Funding
5 First Year (New) Proposals Awarded Funding

Licensee / (Center University) CEO or Principal	Years Funded to Date	Award Amount
COSMAS, Inc. (Center for Nanoparticle Production—BYU)		
Lynn Astle, CEO	**2nd Year**	**$200,000**

Cosmas, Inc. is involved in the development of a novel process for making nanoparticles which have a strong competitive advantage for the production of gamma-alumina supported platinum and palladium catalysts, the largest sector of the supported catalyst market.

GlycoMira, LLC. (SAGE—U/U)		
Tim Miller, CEO	**2nd Year**	**$325,000**

GlycoMira is developing a new class of anti-inflammatory compounds and will be targeting skin diseases like rosacea and eczema followed by systemic diseases like osteo-arthritis and diabetic retinopathy.

Heavystone Laboratory, LLC (Center for Functionally Graded and Designed Cemented Tungsten Carbide and Polycrystalline Diamond Composite Materials—U/U)		
Dr. Al Poskanzer, CEO	**2nd Year**	**$140,000**

Heavystone Laboratory have developed an innovative process and products of functionally graded cemented tungsten carbide material for manufacturing industrial applications including metalworking, oil and gas drilling, geothermal energy exploration, mining, construction, high-wear components, and many other industrial applications that requires extreme wear resistance and impact resistance.

Licensee / (Center University)
CEO or Principal **Years Funded to Date** **Award Amount (cont.)**

iVeena, LLC. (Moran Eye Center—U/U)
Dr. Balamurali Ambati, Pres and CMO; Greg Jones, Acting CEO
New **$100,000**

iVeena, LLC, is an early-stage biotechnology company with the mission of developing a novel proprietary drug delivery device, called the Capsule Drug Delivery Ring, for treatment of the leading blinding diseases. iVeena will fundamentally change the way eye diseases are treated and improve the quality of life of more than 1 million people/year in the United Sates and potentially 3 million/year worldwide by preserving their vision and simplifying treatment.

JSK Therapeutics, Inc (Division of Medical Oncology—U/U)
Dr. Paul J. Shami, CMO **New** **$100,000**

The main focus of JSK Therapeutics (JSKT) is to develop novel anti-cancer drugs using a new cellular mechanism to inhibit the growth of malignant cells. This mechanism, called glutathionylation, involves triggering a chemical reaction between a naturally occurring molecule (glutathione) and cellular proteins. As a result, proteins that are key to cancer cell growth are inhibited, leading to death of the cancer cells. The scientific founders of JSKT have developed two different strategies to induce glutathionylation.

NanoInjection Technologies, LLC (Center for Compliant Mechanisms—BYU)
Gary Crocker, CEO **New** **$100,000**

NanoInjection Technologies LLC has the ability to restructure the rapidly growing biotech marketplace for the injection of DNA and RNA into targeted eggs and other cells with the commercial introduction of the first cellular nanoinjector that both reduces costs and yields a faster DNA implant with significantly higher post injection cell survival rates.

NeuroAdjuvants, Inc. (Dept of Pharmacology and Dept of Med. Chem.—U/U)
Dr. Theodore Stanley, CEO **2nd Year** **$300,000**

NeuroAdjuvants develops stable, blood-brain-barrier permeable neuropeptide-based compounds for the treatment of nervous system disorders. The initial focus of the Company is to bring new therapies for pain and epilepsy. Pain and epilepsy are both multibillion dollar markets dominated by small molecule therapies with considerable safety concerns and/or suboptimal efficacy in many patient populations. NeuroAdjuvants aspires to address these large unmet medical needs by developing safe, efficacious therapies with novel modes of action.

Licensee / (Center University) CEO or Principal	Years Funded to Date	Award Amount (cont.)
Sera Prognostics, Inc. (Joint: Chem/Bio—BYU; Dept of OB/GYN—U/U) **Dennis Farrar, CEO**	**2nd Year**	**$300,000**

Sera Prognostics is using a novel serum proteomics technology to identify and commercialize biomarkers from blood samples of pregnant women to predict those at risk for preterm birth, preeclampsia and other pregnancy complications.

Sparkle Cream, LLC. (Food Services Dept.—BYU) **Joel Clark, CEO**	**New**	**$100,000**

Sparkle Cream's licensed, patented technology allows customers, such as frozen ice cream or frozen yogurt vendors, to carbonate soft serve products such as ice cream and frozen yogurt. The resulting product "sparkles" in the mouth resulting in a fun and novel taste experience.

Thermal Management Technologies, LLC. (Center for Thermal Management Technologies—USU) **Forrest Fackrell, CEO**	**2nd Year**	**$95,000**

Following two years as a USU Center of Excellence, TMT is a 2008 startup licensee poised to commercialize innovative thermal management solutions for a variety of markets including aerospace, IT infrastructure, and electric hybrid vehicles.

Thermimage, Inc. (Department of Surgery, Section of Pediatric Urology—U/U) **Douglas Turnquist, CEO**	**2nd Year**	**$300,000**

Thermimage, Inc. is commercializing a non-invasive medical device technology that will replace the traumatic procedures currently used to detect pediatric Vesicoureteral Reflux (VUR), the effect of which will decrease the number of kidney infections and decrease the risk of permanent kidney damage in over 4 million children every year.

Wastewater Compliance Systems, Inc. (Center for Water Treatment Technology—U/U) **Fred Jaeger, CEO**	**2nd Year**	**$300,000**

WCS, Inc provides proprietary products and services to enable wastewater lagoon operators to cost-effectively remain in regulatory compliance, to increase lagoon efficiency and capacity, and to avoid substantial capital costs by extending useful life of existing facilities. The solution is called the "poo gloo" and is simple to install and maintain.

Licensee / (Center University) CEO or Principal	Years Funded to Date	Award Amount (cont.)
ViroPan, Inc. (Dept of Bioengineering, Microbicide Delivery Lab—U/U) **Dr. Tyler McCabe, CEO**	**New**	**$100,000**

ViroPan, Inc. is a company focused on women's health and the prevention of specific viral sexually transmitted infections (STIs) and together with the University of Utah, ViroPan is developing an important proprietary intravaginal ring (IVR) product that is self-inserted by the woman to release, for up to one month, a potent anti-Human Papillomavirus (HPV) agent for the prevention of cervical cancer and genital condylomas (warts).