

**MINUTES OF THE REGULAR MEETING
OF THE ENTREPRENEURSHIP COMMITTEE
OF THE BOARD OF THE INDIANA
ECONOMIC DEVELOPMENT CORPORATION**

February 22, 2007

Chairperson Sally Byrn convened a regular meeting of the Entrepreneurship Subcommittee of the Board of the Indiana Economic Development Corporation at 9:32a.m. on Thursday, February 22, 2007, at the Indiana Economic Development Corporation, One North Capitol, Indianapolis, Indiana.

MEMBERS PRESENT: SALLY R. BYRN
 DANE A. MILLER
 CATHY LANGHAM

MEMBERS ABSENT: BRUCE WHITE

STAFF PRESENT: Rhonda Cook
 Nate Feltman
 Chad Sweeney
 Ryan Asberry
 Dixie Moorton
 David Gard
 Bruce Kidd
 Karl Koehler
 Kelly Streepy
 Linda Peterson-Roe

OTHERS PRESENT: None

WELCOME

The Chair noted conformance with State Open Door Policies, the presence of a quorum, and the importance of not exposing during discussion confidential information contained in the proposals upon which the recommended awards are based.

Bruce Kidd introduced Linda Peterson-Roe, Project Assistant, to the Board. Linda is a recent addition to the staff.

Mr. Feltman introduced Dixie Moorton as Special Projects Assistant involved with 21Fund activities. Mr. Kidd summarized the minutes of the September 21st meeting of the Entrepreneurship Committee. Dr. Koehler provided progress updates on the Maimoidex and Sentelligence projects.

APPROVAL OF THE SEPTEMBER 21ST MINUTES

Ms. Langham moved approval of the minutes of the December 7th meeting of the Entrepreneurship Committee, with Mr. Miller seconding. The minutes passed unanimously.

PRESENTATION OF 21ST CENTURY RESEARCH & TECHNOLOGY FUND APPLICATIONS

Before the discussion of the awards began Mr. Kidd presented information on the role of the 21st Century Fund in addressing the funding needs of start up companies, the fund's shift in focus which has resulted in more funding of small companies versus universities and an overview of the 30 awards that were made in 2006. Ms. Langham requested that the presentation be sent to the Committee members. Ms. Langham also requested that a slide be added to the presentation that would highlight the financial and technical oversight inherent in the fund's management.

Mr. Feltman brought to the Board's attention that the Closing Fund, the High Growth Fund and the 21st Century Fund had not been funded in the current version of the House budget. He indicated however, that House Ways & Means Committee Chairman Bill Crawford appeared to share the philosophy of the funds to help create new Indiana jobs. Mr. Feltman stated that he felt this was an initial budget and ultimately the IEDC programs would be funded in the final budget. Mr. Feltman said that he felt the programs had wide-spread support.

Mr. Kidd introduced the new format of the Entrepreneurship Committee board packets, which were modified to emphasize commercial impacts and benefits to Indiana of projects which have passed technical merit review.

Three projects were recommended for awards:

Wolf Technical Services, Inc.

Indianapolis, IN

Recommended Award: \$443,798.00

The overall project involves development of a next-generation restraint system for mobile aircrew members of military helicopters. The restraint system under development by Wolf Technical Services addresses the need to intelligently and automatically adapt the restraint response to the level of aircraft dynamics, attenuates crash acceleration pulses, and allows crewmember freedom of movement when greater restraint is not necessary.

The scope of the original SBIR contract is limited in that it seeks only to develop the technology for a magnetic reel-based restraint device. However, the Air Force requirements in general for a total restraint system are much broader in scope—they include the interface to various types and sizes of aircraft, the interface to several types of personnel vests and harnesses in use, the response to various aircraft maneuvering capabilities, and requirements that apply to the dynamics of extended crash sequences, i.e. rolling on the ground after an initial impact. There is a gap that needs to be bridged between the restraint device technology of the SBIR and the fielding of a completed system in all Air Force helicopters, as well as other military and commercial helicopters.

21 Fund support will specifically address the broader Air Force commercialization and fielding requirements not covered by the SBIR technology development, such as ensuring compatibility of the restraint system across multiple helicopter platforms; ensuring that the restraint system safely interfaces with the variety of personnel safety vests in use; ensuring operation throughout extended crash events; and ensuring that the restraint system addresses the diverse maneuvering capabilities of the various targeted helicopter platforms, such as the HH-60 and the CH-53.

Mr. Kidd introduced the discussion of the Wolf Technical Services, Inc. project. He noted that Wolf Technical had previously been awarded a Phase II SBIR grant and that 21 Fund award would allow the company to develop a working prototype that has a pending \$40 million purchase contract with the USAF. This project will also be leveraged across multiple platforms. Mr. Kidd further described the company as being well-positioned both technologically and in the market place. Mr. Kidd pointed out the “multiplier effect” that this award would have on another Indiana company, IMMI, which would manufacture the product. Ms. Langham questioned whether IMMI, as the manufacturing partner of Wolf Technical, had invested money into the project. Mr. Kidd responded that IMMI had invested time in lieu of equity. Ms. Langham asked how long a company must stay in Indiana after receiving an award and not be subject to penalties. Mr. Sweeney responded that the typical commitment was for seven years (5 years past award). Discussion concluded.

Ms. Langham moved approval of an award of \$443,798.00 award. Mr. Miller seconded, and the motion was approved unanimously.

Before the discussion of the next project Ms. Byrn introduced the recommendation that 21 Fund applicants that have already been approved for a Phase II SBIR match will be deemed to have met the technical requirements of the 21 Fund application process. She

proposed that if a thorough business review by the IEDC staff supported the award, the project should be approved and that it shouldn't require additional evaluation by the committee. Ms. Byrn suggested that an email to the board would be sufficient for the approval of the award. Mr. Feltman stated that the Entrepreneurship Committee met frequently enough to actually discuss the recommendation person since business issues and economic impact metrics were discussed, but that the process could be streamlined because of the previous SBIR certification.

EmNet, LLC

Granger, IN

Recommended Award: \$1,054,247.00

The combined sewer overflow (CSO) problem is a major environmental, financial, and legal challenge facing 772 cities in the Midwest, West coast and Northeastern United States. In these cities storm and sanitary sewer flows are combined together before being treated at the waste water treatment plant (WWTP). To prevent localized flooding in basements and streets during a heavy rain event, these combined waters are usually diverted into a local river or stream, thereby creating a CSO event. Each year 850 billion gallons, a volume equivalent to Lake Huron, of untreated wastewater is released into rivers, lakes, and ocean affecting 46 million people. More than 100 CSO cities are located in Indiana.

This project will develop and deploy a metro-wide embedded network for monitoring and controlling CSOs in the City of South Bend, Indiana. A wireless network of embedded devices (called CSOnet) that measure different parameters such as pressure and flow will be distributed throughout South Bend's 7-mile long main interceptor line. Also, 3 strategic locations will be augmented with electrically actuated flow controlling devices. The wireless network of sensors and actuators will then automatically adjust the flow in the automated locations to optimize the use of the interceptor lines effectively reducing CSO occurrences. The project will demonstrate key technical aspects of a city-wide CSOnet deployment.

Ms. Byrn began the discussion of this project with a description of the sewage overflow problem in Lafayette and expressed support of ways of remedying the problem. Mr. Kidd described the proposal as a means of mitigating sewer overflow. He stated that this company was the result of an initial 21 Fund award to Notre Dame University where this technology was initially developed and spun off. Ms. Langham questioned the feasibility and expense of installing the flow sensors. Mr. Kidd responded that this technology represented a ten-fold savings over what was currently available in the marketplace today according to the South Bend pilot project. Ms. Streepy added that with this technology there would be no need to install new infrastructure, that the sensors could be installed in the existing sewer system. Dr. Koehler noted that the sensor technology would provide intelligent controls and a much higher dynamic range. Ms. Langham asked if South Bend had committed to installing the system. Mr. Kidd responded that the community has committed to the project. He also added that there were Angel investors committed to investing in the project as well.

Ms. Byrn moved approval of a \$1,054,247.00 award to EmNet, LLC. Ms. Langham seconded the motion. Discussion ensued about the other investors in the project. Ms. Langham asked who the other investors were in the project. Mr. Feltman stated that the \$350,000 commitment from South Bend was a positive sign. Mr. Kidd described the milestone process that would determine the payment schedule of the award. The initial award (\$500,000) would be used to create a large-scale demonstration of the CSOnet system. The remaining funds would not be awarded until year-one milestones as described in the proposal were met. Ms. Langham suggested that the first milestone that the technology was tested and operational in South Bend. Ms. Byrn agreed, observing that the contract will manage how the funds are awarded. The motion was approved unanimously.

Purdue University (Garimella)

Indianapolis, IN

Recommended Award: \$1,899,503.00

Using the technology developed through a Round 5 award from the 21st Century Research and Technology Fund on a project entitled "Novel MEMS-Based Microscale Cooling System for the Thermal Management of Integrated Microelectronics," this follow-up project completes the development and fabrication of the two-phase microchannel liquid cooling components and the high-power transistor components needed for integrated high-power electronic driver prototypes for commercial automotive applications, which would be commercialized through Delphi.

The project would also develop the assembly technology and build functional prototypes. Components to be developed and fabricated include micropumps (mechanical and MEMS-based), an electrical/fluid routing printed circuit board, low-cost liquid-cooled transistor packages, fluid input/output ports, a product enclosure, and a heat exchanger. Functional prototypes will be tested for performance and reliability and used as the basis for a cost-performance study.

The key rationale for this funding request is that it will ensure translation of emerging component technologies developed through a previous Round 5 award into commercial products through a close collaboration between two primary partners, Delphi and Purdue, which has proven to be very effective and successful. This will ensure that the Fund's goals, principally economic growth, increased market share and job creation, are met.

Mr. Kidd introduced the Garimella proposal, noting that there were some initial concerns about investing in a project that has Delphi as the manufacturing partner. The new technology was developed as the result of collaboration between Delphi and Purdue. The product would mitigate the issues of heat created by micro components in automotive devices. Mr. Kidd also noted Delphi would initially only receive \$190,000 of the award to cover costs associated with supplying Purdue with necessary materials to proceed with the project. Delphi has told Mr. Kidd that this product is one of the top three programs that it continues to support as it moves through bankruptcy. Mr. Feltman described how the IEDC had been working with Delphi over the past nine months and has been assured that this project is a priority for the company. The lack of funding by

Delphi represents its bankruptcy proceedings and not a lack of confidence in the product or the partnership with Purdue. Mr. Feltman also addressed the question of whether Delphi will emerge successfully from bankruptcy. Delphi has been working with the Governor, there is a new union contract in place, and the company has assured the IEDC that this project is a priority and Delphi will maintain the skilled engineering level positions required in the state. After the product is commercialized by Delphi the 21 Fund will receive royalty payments. Dr. Koehler pointed out that by partnering with Purdue, Delphi is demonstrating effective resource management. Ms. Byrn questioned the 21 Fund staff about their confidence regarding Delphi. Mr. Kidd explained that this product is a part of their future and that Indiana could become an R&D center as the result. He also pointed out that the technology is currently being marketed to Apple and will be included in hybrid vehicles. Mr. Kidd further stated that the award will go to Purdue with no additional money being given to Delphi until they emerge from Chapter 11. The 21 Fund staff and the Purdue business officer will monitor the disbursement of funds.

Ms. Langham questioned who would own the technology and whether it could it be sold to another commercialization partner. Mr. Feltman answered that Delphi has hired 1,200 employees in support of the project and have committed to keeping the engineering of the product in Indiana.

Ms. Byrn spoke in support of helping companies that currently reside in Indiana, to deflect a criticism that the focus has been on bringing in new companies to the state.

Mr. Feltman expressed confidence in the ability of the project to leverage the engineering talent resident in Indiana.

Mr. Miller motioned to approve a \$1,899,503.00 award to Purdue (Garimella) subject to oversight described above. Ms. Langham seconded, and the motion was passed unanimously.

Dr. Koehler presented an overview of the Cellulosic Challenge.

This nationwide initiative has the goal of attracting the best research in alternative fuels production via cellulosic materials

DISCUSSION OF ADMINISTRATIVE MATTERS

21st Century staff briefly discussed improvements to the board packets and updated the Committee regarding expansion of the site visits and auditing procedures. Mr. Kidd informed the Committee that there would be additional awards to be considered at the Committee meeting prior to the regular Board meeting on March 15.

ADJOURNMENT

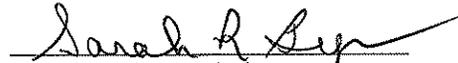
Mr. Kidd thanked the committee. Chairperson Byrn adjourned the meeting at 10:53 a.m.

Respectfully submitted,



Bruce Kidd, Director of Entrepreneurship, Indiana Economic Development Corporation

Approved,



Sally R. Byrn, Chairperson