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FOR
TECHNOLOGY TRANSFER AND RESEARCH COMMITTEE

Committee Meeting: 8/21/2013
Austin, Texas

Wallace L. Hall, Jr., Interim Chairman
Ernest Aliseda
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R. Steven Hicks
Brenda Pejovich

1. U. T. System: Update on the U. T. Horizon Fund portfolio

INTRODUCTION

Mr. Bryan Allinson, Executive Director of Technology Commercialization, will provide an update on the U. T. Horizon Fund portfolio.

REPORT

The U. T. Horizon Fund (Fund) completed a follow-on investment of $121,976.47 in Rapamycin Holdings, a U. T. Health Science Center - San Antonio company. Several other investments are in process, including due diligence review and review with advisors.

The U. T. System Office of Technology Commercialization (OTC) initiated steering committee meetings with all 15 U. T. System institutions covering utilization of Fund - Part B (other services) aimed at strengthening and building the portfolio. Activities reviewed by the committee include funding examination of royalty-bearing license agreements, funding stronger patents, and proof of concept funding.

The OTC completed a Request for Qualifications (RFQ) for the purpose of examining royalty-bearing technology licenses. In addition to Deloitte & Touche, three additional firms were identified. The Fund initiated a work order with Deloitte & Touche covering examination of a royalty-bearing license in the biopharmaceutical field.

Copies of the Fund's current portfolio, the Rapamycin investment memo, and the revised investment thesis for Part A funding memo were provided to members of the Board in advance.

A copy of a press item on the Horizon Fund is set forth on the following pages.

May 21, 2013 www.XConomy.com

UT Horizon Fund Aims to Build, and Capture, Value from Its Startups

Bernadette Tansey 5/21/13 **Follow @tanseyverse**

Campuses at the University of Texas, such as the MD Anderson Cancer Center in Houston, can boast of star-studded faculties to rival the innovative scientific leadership at UC San Francisco, UC Berkeley and Stanford University. In 2009, the 15-institution University of Texas system was second only to the powerhouse University of California system in the number of patent applications filed, startups spun out from campus inventions, and research dollars raised.

Yet UT ranked only 19th that year in terms of income from licensing its innovations, the Association of University Technology Managers found. That means while there are plenty of inventions coming out of Texas, few have generated big returns for the original institution, like Google's success did for Stanford. The Texas university system has been taking steps to change that ranking and nurture its young companies in an environment much more challenging than California's.

The state of Texas is thinner on the kind of venture capital firms that hover near the big California research universities, eager to finance the next Google or Genentech that springs from the mind of a professor or student.

"The VC environment is less active than Silicon Valley or New York or Boston," says Wei Chen, a UT technology commercialization official.

The UT system sought to change that in 2011 when Bryan Allinson of the UT System Office of Technology Commercialization began working to create a fund that could help UT startups get off the ground. That was the beginning of what's now called the **UT Horizon Fund**.

"Starting the UT Horizon Fund fitted perfectly within our strategic mission to improve commercialization of technologies out of research at UT System institutions," says Allinson, the founder and executive director of the UT Horizon Fund. "Importantly, it also fits our financial mission to provide a positive return on investment back to UT."

Like other universities, UT has already acquired ownership stakes in spinoff companies by accepting equity as part of the compensation for licensing its intellectual property to startups. Since the Horizon Fund began operations last year, it has been able to invest aggressively, at a time when many universities can't. The UT Horizon Fund has also pumped more money into seven of the 154 companies that were already part of UT's portfolio. Among those is Rapamycin Holdings of San Antonio, TX, which is evaluating rapamycin, a drug approved to prevent organ rejection, as a treatment for diseases of aging.

The Horizon Fund has also brought two new companies to life by linking innovative faculty members and students with the resources they needed to go into business. One of those is Austin, TX-based M87, founded by a professor-student team that uses software instead of expensive infrastructure improvements to expand cellular coverage for telecommuncations networks.

University venture funds are not new. Back in 1985, for example, the Stanford School of Engineering initiated plans for a venture fund to support the school and its entrepreneurial spinoffs. The school's new dean, Jim Gibbons, persuaded Silicon Valley venture firms to make donations to the school, but use the money to create the**Stanford Engineering Venture Fund**. The VCs helped invest the funds in growing companies, including startups based on Stanford technology. The University of California also benefits from a seed-stage venture fund whose capital comes from private backers such as VCs and drugmakers. **Mission Bay Capital** was founded in 2009 to invest in companies whose founders or technologies are associated with the UC system.

So far, the investment money for the UT Horizon Fund has come from the University of Texas fund. The UT Board of Regents approved an initial $10 million for the fund in 2011, and added another $12.5 million this year. Still, that $22.5 million total doesn't match the hundreds of millions of dollars that an established VC firm could raise.

But Allinson says the money helps fill an early funding gap for entrepreneurs just trying to get started. "We look for a win-win-win scenario," he says. "We want to help entrepreneurs commercialize UT technology, fill a crucial funding gap for the early stage startup, and create an opportunity for a return back to co-investors. "

Venture firms used to take big risks on such early startups in the hope of a high rate of return. But their plans have shifted, Chen says. “A lot of firms are moving to later-stage companies,” she says. “They want a quick exit.”

The Horizon Fund, by contrast, is focused on helping during a company’s early days. It helps the new companies make the leap from the university lab and the boost from its small early investments can help a startup attract funding from other investors, says Chen, who heads the New Ventures unit of the Horizon Fund. While the VC community is not large in Texas, the state has an active contingent of angel investors. The Horizon fund is a matchmaker among startups, angels, and venture firms.

The Horizon Fund also links up experienced executives with faculty members and staffers who have great technology ideas, but too little business experience to serve as CEOs of their own startups. They may need a chief executive to take over plans for fundraising and building out the executive team.

The Horizon Fund invests between $100,000 to $2 million in each company it supports. Last year, though, fund officials decided to put up $50,000 to launch a new competition for student entrepreneurs. The winner of the system-wide contest was Jordan Kaufmann, a UT-San Antonio PhD student who used her $50,000 prize to found the Austin, TX-based company **Cardiovate**, which is using tissue engineering to develop a new kind of graft to treat aortic aneurysms.

The quality of applicants in the pilot competition encouraged the Horizon Fund to raise the top prize money to $100,000 this year, Chen says. Eva Deemer, a second-year PhD student in materials science and engineering at UT-El Paso, won the most recent competition held in Austin on May 2. Deemer is founding an El Paso, TX, company, American Water Recycling, which uses filters made of graphene oxide as a new method to purify the many gallons of water contaminated every day with grease from restaurants and other sources.

The UT Horizon Fund competition heightens the entrepreneurial culture at the system’s 15 campuses by holding out the real-world possibility that students can become startup founders before they even graduate. All who participate get the experience of presenting their technology and business plan to a panel of judges that includes venture firm partners, angel investors, and other industry experts. Each team of student finalists is assigned a mentor who helps develop the business plans.

“This whole process, we are hoping, is more than just selecting a winner,” Chen says. “Nobody’s a loser.”

And the contest calls forth more ideas that can turn into patented inventions which then could bring revenue to the UT system. The contest winners receive continuing business mentorship and the possibility of follow-on investments from the Horizon Fund.

Those follow-on investments are a major part of the fund’s strategy across the UT system’s portfolio. They can reduce or eliminate the dilution of the university’s early equity stake in a company as it grows and raises more money from new investors, Chen says. The Horizon Fund allows the university to exercise its right to participate in successive funding rounds.

“That creates value for both the university and the company,” Chen says.

For the same reasons, the UT system also collaborates with **Osage University Partners** of Bala Cynwyd, PA, a venture capital fund that forms partnerships with research institutions that want to keep investing in their portfolio companies, but lack the funds to support them all.

It’s too early to gauge the returns from the UT Horizon Fund, but a back-testing evaluation showed the potential for promising returns.

Allinson said that the UT Horizon Fund initiated a back-testing analysis covering startups out of UT System from 2002-2012 that showed three companies generated exits of more than a billion dollars. “The potential for a return is there,” Allinson says.

Of course, that means the university system missed some big investment opportunities during the years before they started operating the venture fund. Allinson estimates that if UT System had started the UT Horizon Fund in 2002, it could have invested in 72 of its spinouts and generated a 54 percent return on investment.

University leaders are also aware that its students might be the source of some of its best investments. In 1984, Michael Dell was **a 19-year-old premed student** at UT-Austin. Still living in a dorm room, he founded the company that was to become Dell Computer with $1,000 from his own savings. Four years later, the company went public,

and its market capitalization leapt to $85 million. By 2001, it was ranked as the top computer systems provider worldwide.

“Somewhere in the UT system, the next Michael Dell is at work on a patent-worthy idea,” Chen says.

2. U. T. System: Report on the Texas FreshAIR (Academia-Industry Roundtable) initiative

INTRODUCTION

Dr. Patricia Hurn, Vice Chancellor for Research and Innovation, and Mr. Bryan Allinson, Executive Director of Technology Commercialization, will provide a report on the Texas FreshAIR (Academia-Industry Roundtable) initiative, an effort by the U. T. System to engage U.S. and global industries in partnerships designed to advance new science discovery at U. T. System institutions.

REPORT

The inaugural Texas FreshAIR event will bring together the six U. T. System health institutions and 14 of the major biopharmaceutical corporations. The goal for the event is to showcase the vast capacity for drug and biological discovery in Texas and to kick off new and sustained research collaborations with U. T. System faculty and institutions. These collaborations may involve single U. T. System institutions or cross-institutional endeavors.

The 2013 event will convene at the AT&T Executive Education and Conference Center in Austin, Texas, on September 25-26, 2013. The roundtable meeting will bring together thought leaders from the U. T. System health institutions and industry executives and researchers.

Day One will showcase the strength of the six U. T. System health institutions and present drug discovery efforts at the different institutions. This will be followed by breakout sessions to present key science from the U. T. System institutions in oncology, metabolic and cardiovascular disease, and immunology and biotherapeutics, and then end with a poster session and a networking reception.

Day Two will include sessions on the "Barriers, Opportunities, and Challenges to U. T. Academic-Industry Partnerships" and "Insights into the Pharma Industry" and additional breakout sessions to present key science in neuroscience, infectious disease, biomarkers, and epigenetics. Key general speakers include Chancellor Cigarroa; Ronald DePinho, M.D., President of U. T. M. D. Anderson Cancer Center; U.S. biopharmaceutical leaders in drug discovery; and the most innovative researchers from U. T. System health institutions.

A brochure on the Texas FreshAIR initiative is set forth on the following pages.

Texas FreshAIR

ACADEMIA INDUSTRY ROUNDTABLE

AN INITIATIVE of

THE UNIVERSITY of TEXAS SYSTEM

Seeking Science to Science Collaborations

The University of Texas System FreshAIR initiative is an effort to create successful partnerships* between UT System health institutions and the life sciences industry.

For more information, visit our website at-
www.utsystem.edu/texas-freshair

Why FreshAIR?

The University of Texas System hosts some of the world's premier health research institutions:

The University of Texas M.D. Anderson Cancer Center (Houston)
The University of Texas Southwestern Medical Center (Dallas)
The University of Texas Health Science Center at Houston
The University of Texas Medical Branch at Galveston
The University of Texas Health Science Center at San Antonio
The University of Texas Health Science Center at Tyler

- A key objective for the UT System is to increase public-private partnerships as outlined in Chancellor Francisco Cigarroa's 2011 A Framework for Advancing Excellence.

- Federal funding for basic, clinical and translational research is increasingly uncertain.

- Science-based partnerships* between academia and industry offer advantages to both entities. Together they can address the challenge of developing innovative drugs for their mutual benefit and the well-being of society.

- Texas has a unique population that includes a large Hispanic population in South Texas and mirrors the future population of the United States.

- Collaborations between academia and industry ensure that Texas remains competitive as a strong player in science and biotechnology.

UT System Faculty Honors

Total faculty number at UT health science centers	8,690
Members, Institute of Medicine of the National Academies	41
Members, National Academy of Sciences	40
Nobel Laureates	7

(2012 UT System Fast Facts)

FreshAIR Benefits

- Access to pre-publication research inventory for each institution with potential commercial impact in early discovery research, clinical research and drug discovery with periodic updates.
- Access to the UT clinical site networks for the conduct of clinical trials through the Texas CTSA Consortium.
- Opportunity for dialog between industry and UT System researchers through regular roundtable events focused by therapeutic area.
- Opportunity to interface with UT System trainees, graduate students and post-doctoral fellows.
- Access to simplified processes such as IRB reciprocity between institutions and a standard licensing agreement.

Mark Your Calendar

Attend FreshAIR's inaugural event September 25, 2013 (check-in at noon) and September 26, 2013 (adjourns at noon) in Austin, Texas, for a two day event filled with cutting-edge science and research in the therapeutic areas of Oncology, Cardiovascular and Metabolic, Neuroscience, Immunology, Respiratory and Infectious Diseases.

*The term "partnerships" is used to describe a broad range of agreements between an academic institution and a life sciences company to share materials, resources and/or intellectual property, including but not restricted to acquisition and licensing.
(Adopted from Deloitte R&D Article Series - Re-igniting the R&D engine in a constrained environment, (2010).

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THE UNIVERSITY *of* TEXAS SYSTEM
Nine Universities. Six Health Institutions. Unlimited Possibilities.

3. U. T. El Paso: Report on student technology startup, American Water Recycling

INTRODUCTION

President Natalicio will introduce the founding team members of U. T. El Paso's student technology startup, American Water Recycling as follows:

- **Ms. Eva Deemer**, Interim Chief Executive Officer, Chief Technology Officer, material science and engineering doctoral student, expected graduation: 2015
- **Mr. Diego Capeletti**, Chief Financial Officer, MBA, graduated: 2013
- **Mr. Alex Pastor**, Chief Marketing Officer, undergraduate student, expected graduation: 2014

REPORT

President Natalicio will report on research and entrepreneurship programs at U. T. El Paso. Ms. Deemer will report on her research in materials and engineering that led to the formation of American Water Recycling. The recently patented technology may potentially provide a better way to clean polluted industrial waste water.

BACKGROUND INFORMATION

On May 2, 2013, 16 student teams from 10 U. T. System institutions competed in the U. T. System Horizon Fund Student Investment Competition in Austin, Texas. The teams presented their business plans and ideas to a high-profile group of venture capitalists, investors, and industry experts. American Water Recycling won the U. T. Systemwide competition over teams from U. T. Arlington, U. T. Austin, U. T. Dallas, U. T. Pan American, U. T. San Antonio, U. T. Southwestern Medical Center, U. T. Health Science Center - Houston, and U. T. Health Science Center - San Antonio.

Press materials covering American Water Recycling and the U. T. System Horizon Fund student competition event are set forth on the following pages.

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(http://www.utsystem.edu)

Home > Blog > Printer-friendly

16 teams to compete for up to $100,000 in UT System Horizon Fund competition

Blog Author:
UT System
Monday, April 29, 2013

On May 2, sixteen student teams from 10 University of Texas System institutions will compete in the UT System Horizon Fund [1] Student Investment Competition for up to $100,000 in seed funding. The teams will present their business plan and idea to a high-profile group of venture capitalists, investors and industry experts who will judge the entries and award a winner from one of two categories: Information Technology or Biomedical/Engineering. The winning team will be announced during an award reception at the end of the day.

"This event showcases and supports entrepreneurial students, medical residents and trainees from UT institutions," said Bryan Allinson [2], executive director for UT System technology commercialization [3].

"Students from all 15 UT institutions had a chance to be considered for the competition, and the 16 finalists either won their campus investment competition or were selected through a rigorous at-large process. Although only one team will win the award, the opportunity to present to, network with and learn from renowned investors, advisors, mentors and industry experts will be invaluable as they continue their journey of entrepreneurial growth and success."

The following 16 teams will compete in the UT System Horizon Fund Student Investment Competition:

Information Technology:

Connect5 (UT Arlington) is a platform that allows professionals to network with other professionals who share similar interests and skills through targeted offline micro-networking events.

E2 Home (UT Arlington) is a web and smartphone application to help homeowners and residents reduce energy-related costs.

Global Print Solution (UT Dallas) is an output data management software that performs

automated formatting of a print file and streamlines various production tasks, such as archiving documents for retrieval and reprint.

Hoot.Me (UT Austin) is an educational question-and-answer platform designed to integrate with Facebook and LMS providers like Canvas. Students can get their questions answered from fellow classmates, so teachers can crowdsource help in big classes without losing control of the discussion.

Ludus (UT El Paso) is a collaborative, cloud-based virtual project space designed to empower creative teams through the combination of structured and unstructured creative tools in an immense project space that stores, sorts and attributes intellectual capital in a new way.

Mobile Wellness Technologies (UT El Paso) is researching, developing and creating a line of products that monitor and improve personal wellness focusing on management of chronic conditions. A mobile evidence-based and user-friendly system to monitor stress levels and mental fatigue has been developed and is being tested.

RideScout (UT Austin) is a mobile application that shows users all of their ground transportation options on a single, intuitive platform.

YouPark (UT Dallas) is an automated parking management and security service run through a Radio Frequency Identification Device system that allows drivers to reserve parking through their smart phone.

Biomedical/ Engineering:

AdBm Technologies (UT Austin) has developed patented technology to significantly reduce underwater noise in the offshore oil and gas and pile driving industries.

American Water Recycling (UT El Paso) will enable industries to discharge safe, clean re-useable water using a process that is economically and environmentally sustainable.

BSX Athletics (UTHSC-Houston) has developed a state-of-the-art performance monitoring platform for endurance athletes. It is comprised of both hardware (BSX sensor) and software (mobile app) components, which together provide athletes with real-time physiologic monitoring.

CyberShark (UT El Paso) is a cyber and energy security training company that will teach utility companies how to establish sound cyber and energy security protocols and policies and how to expose vulnerabilities within their networks, in addition to providing valuable information on how to prevent their grids from being debilitated.

Lapara Medical, Inc., (UT San Antonio) offers a laparoscopic cooling system for life-saving tumor removal surgery for kidneys and kidney transplants. The system cools the kidney to prevent damage to the organ while reducing the risk of postoperative failure.

MyFiberPlex (UT Pan American) is a novel repair method for the Anterior Cruciate Ligament (ACL). This technology has recently emerged as a promising technique for tissue engineering due to its ability to produce fibers with differing porosities, surface area, fiber diameter and fiber alignment.

Seismos (UT Austin) is a diagnostics platform for real-time monitoring of underground reservoir flows in oil fields that does not shut down production. The technology services company targets CO2 EOR operators and provides a solution that that can help producers achieve increases in production that can span from 70 to 300 percent based on empirical field information.

Transformative Nanotechnology (UT Pan American) - has developed a technology that can produce a commercial source of super-fine single-digit micron/nano glass particles in a continuous process with production volume in the range of pounds per day. This technology is protected by one provisional patent application in use and one additional invention disclosure focused on the process.

Student exhibits will be open to the public from 8:00 a.m.-noon in Room 208 of the UT System Ashbel Smith Hall, 201 West 7th Street.

Links:
[1] http://www.uthorizons.com/?src=uts-tech-comm
[2] http://utsystem.edu/offices/technology-commercialization/executive-director
[3] http://utsystem.edu/offices/technology-commercialization

UTEP students launch tech startup

By Robert Gray El Paso Inc. staff writer | Posted: Sunday, May 19, 2013 6:00 pm

Amidst final exams and graduation rehearsals at the University of Texas at El Paso last week, two business students and one from engineering were celebrating the launch of their technology startup company.

American Water Recycling would capitalize on one of the earth's most valuable resources – water. The trio's startup promises to save money for industry while cleaning the environment. But it also holds promise for the El Paso economy.

"You don't need to convince people they need water," says Eva Deemer, 28, the startup's interim CEO and chief technology officer.

The venture, founded in April by Deemer, Diego Capeletti, 32, and Alex Pastor, 22, got a big boost two weeks ago when it became the first student venture at UTEP to win the UT Horizon Fund Student Investment Competition in Austin.

The win included $100,000 and advancement to the global competition, where the trio finished in the top 10, competing against Ivy League schools and universities from as far away as India and Thailand.

The technology the students recently patented would provide a better way to clean polluted industrial waste water, Deemer says.

It would save companies money, help clean the environment and, they hope, bring in profits.

Industries involved in refining oil or hydraulic fracturing, the process of injecting water and chemicals into the ground to free oil and gas from shale-rock, use a lot of water, and the costs involved in handling and disposing of the polluted water are huge.

The industries the trio would focus on can pay as much as $8-million a year to dispose of polluted water, according to Deemer.

American Water Recycling's filtering technology is based on a high-tech material called graphene.

"This is not a Brita filter," says Deemer, who is working towards a doctorate in materials science and engineering at UTEP.

Graphene is a flexible carbon substance that is one of the strongest and lightest materials known to mankind. It's stronger than diamonds yet flexible and, three years ago, won scientists at the University of Manchester the Nobel Prize in physics.

The material also happens to be really, really good at filtering water, Deemer says. The system the trio is developing, she says, is cheaper, faster and cleaner than other technology on the market now.

The students are seeking upwards of $700,000 to fund a year of operation and create a pilot program, Capeletti says. Right now, the startup is based at the Hub of Human Innovation business incubator in Downtown El Paso.

The university has been trying for years to create more technology spinoffs like American Water Recycling, with mixed results, and officials hope the startup business is only the beginning. So do those interested in local economic development that believe El Paso has the potential to become a technology hub – the "silicon border."

That tech sector, the thinking goes, would provide more jobs in El Paso for UTEP engineering and biotech students who often have to leave the city to find employment.

While most of their peers are job hunting as they graduate, the trio says they are not.

"We just made our own jobs," Deemer says.

The university has also been trying to build stronger ties between the College of Engineering and the College of Business to better connect engineers who have ideas with businesspeople who have business plans.

A $10-million donation made by Mike Loya, president of one of the world's largest oil trading companies and a UTEP graduate, gave the effort a big boost almost two years ago

"Thanks to Mike Loya's gift to UTEP's colleges of Business Administration and Engineering, we have now planted the UTEP flag as a leader of academic integration that will result in market success for the state of Texas and the nation," said Robert Nachtmann, dean of UTEP's College of Business Administration, in a statement.

The new Mike Loya Center for Innovation and Commerce, as well as UTEP's Materials Research and Technology Institute, played a major role in bringing, Deemer, an engineer, together with Capeletti, who graduates Saturday with an MBA, and Pastor, an undergraduate business major.

The three formed the company to compete in the local venture competition in March.

"We all met at my house after Thanksgiving for lattes and tea," Deemer says.

They won the local competition and went on to win the statewide competition and advance to the semifinal round of the Global Venture Labs Investment Competition.

"I was already working with graphene and people had come to me with their problems, but I didn't think of it as a business," Deemer says.

What if they fail?

"The best part of graphene is, if it doesn't work out, there are a million other things you can do with graphene," Deemer says.

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