

## Dear Friends...

The only constant at the Technology Park is change, to steal a line from Technology Park President Steve Frayser.

And that includes our newsletter format. We surveyed hundreds of subscribers last spring and learned that an e-newsletter would better serve the needs of our technology savvy, time-pressed readers. In addition to a new format, we have more concise articles, interactive links and a fun new trivia section.

We will still include all of the in-depth Tech Park news you need, pictures of our latest events, and even a hardcopy for those of you who request one.

Thank you for all of the feedback that you have given us in the past few months. We would appreciate any comments you might have about the new newsletter. To contact us, please e-mail [techpark@nufoundation.org](mailto:techpark@nufoundation.org).

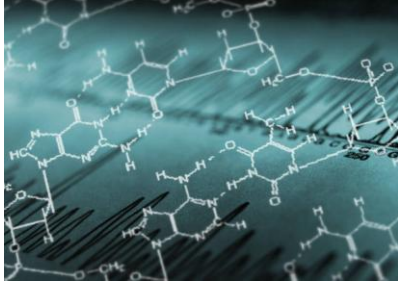
Thank you again, and please enjoy the newsletter!

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## NTC receives NIH grant for gene silencing



Lincoln, NE - Around the world, more than 3,000 biotechnology and pharmaceutical companies use transplanted genes to make biological products in living cell factories, as well as for gene therapy and genetic immunization research. A significant problem for the industry as a whole is that the foreign genes which they use (called transgenes) are often inactivated soon after they are inserted into their host cells, making them useless.

NTC, which has made great strides at improving gene tools (vectors) in the past, has now been awarded a \$146,641 Small Business Innovation Research (SBIR) Phase I grant for pilot studies aimed at reducing or eliminating the gene silencing phenomenon. The grant award was funded by the National Institute of General Medical Sciences, of the National Institutes of Health (NIH).

“Gene silencing has been a major stumbling block for gene therapy, and for the biologics industry as a whole,” said Clague Hodgson, NTC’s president, adding that, “The phenomenon has multiple causes and is generally related to the host cell’s defense against invading pathogens, part of the innate immune system, which is also the first line of defense against viral and bacterial infections.”

“Avoiding such elaborate host defense systems in order to reprogram the genetics of the host cell requires some careful engineering maneuvers, equivalent to planting a Trojan horse,” according to Dr. Jim Williams, the Principal Investigator on the grant. To accomplish their goals, NTC researchers will test several tricks designed to overcome the silencing phenomenon.

First, they will alter certain essential DNA sequences in the vectors that ‘look foreign’ to the cell, reducing chances that they will be earmarked for silencing.

Second, they will eliminate antibiotic resistance genes, which are a specific target for silencing, and are a worry to the FDA as well. That goal has recently been accomplished by NTC, according to Williams.

Finally, they will redesign the vectors, so that gene activity is maintained at a high level in the DNA sequences flanking the critical transgenes. This is intended to fool the cell into behaving as though the transgene is a normal, active component of the cell, as opposed to appearing to be inactive ‘junk DNA’, which would otherwise be earmarked for silencing.

If successful, the research can then be applied in most areas of the biotechnology industry, including for production of recombinant proteins, peptides and hormones, as well as for gene therapy and genetic immunization (DNA vaccines).

Phase I SBIR grants are intended to support limited proof-of-concept studies. If Phase I grant milestones are successfully met, a larger Phase II grant may be funded, which is expected to lead to commercial products and processes.

NTC has a history of successful commercialization of its discoveries, according to Hodgson. “We are working in the trenches every day, and we can move discoveries from the lab bench, to the process, to the product in one shop,” he said, adding, “It’s the beauty of being a small company, able to turn on a dime.”

The current award is the seventh SBIR award made to NTC since 1997.

## Head of NIH program visits Nebraska



Dr. Jo Anne Goodnight will be coming from the nation's capitol to Nebraska to host the "From Lab to Life" workshops in Omaha and Lincoln on Thursday, October 11, in order to discuss opportunities offered by the National Institutes for Health (NIH) Small Business Innovation Research (SBIR) Program.

Goodnight, the SBIR and Small Business Technology Transfer (STTR) program coordinator of the NIH and the Department of Health and Human Services Public Health Service, plans to speak about the competitive SBIR and STTR grants that the government awards to small businesses in an effort to stimulate innovation.

Goodnight also serves as the acting director for the Division of Special Programs in the Office of Extramural Research. She has held positions with the U.S. Department of Agriculture and the Food and Drug Administration. As an intramural research scientist at the National Cancer Institute, she published more than 20 research studies.

Goodnight's lecture will be the focus of the events, which will take place in Omaha in the morning and Lincoln in the afternoon.

The first "From Lab to Life" session will begin at 8:30 a.m. in Omaha at the University of Nebraska Medical Center College of Nursing, 42nd Street and Dewey Ave., in Room 1011/1012. A continental breakfast and networking will precede the workshop at 8 a.m.

That afternoon, a second workshop will be held at 4:15 p.m. at the University of Nebraska-Lincoln (UNL) East Campus Student Union, Arbor and Center Dr. Refreshments and networking will follow the presentation.

In addition to Goodnight's lecture, other discussion topics include:

- Discovering what research NIH is seeking, what money is available and how to get proposals funded.
- Learning how the pilot manufacturing assistance program, Commercialization Assistance Program (CAP), and Pipeline to Partnerships (P2P) help small businesses commercialize innovation;
- Finding out how to stay informed about funding and partnerships opportunities, how to assess a partnership fit and important "dos and don'ts"; and
- Learning about the services NIH programs offer to help move an idea into the marketplace, including identifying other uses for technologies, market strategies, strategic planning, alliance building and investor partnerships, and manufacturing and operational consulting.

Event sponsors for the event include UNO, UNL, the UNMC, Creighton University, Boys Town National Research Hospital, University of Nebraska Technology Park, UNL Technology Development, Nebraska EPSCoR and Bio Nebraska, University of Nebraska, and Nebraska Business Development Center.

For more information, call Jean Waters at (402) 554-6259 or visit <http://www.sbirnebraska.unomaha.edu>.

## Cabela's hunts for skilled employees

Cabela's is shooting for the best and brightest as the company aims to hire between 300 and 350 by mid-November at its Call Center located in Lincoln, NE increasing the number of people on its current staff by more than 50 percent.

Cabela's is currently accepting applications for part-time and seasonal morning, afternoon and evening customer relation associates, through October. Applications are also being accepted for full-time and part-time positions with Worlds Foremost Bank in Lincoln, according to Human Resources Manager Judy Fischer.

Fischer said that Cabela's generally hires additional part time employees during this time of year to gear up for the holiday season when calls increase dramatically. Fischer added that she has been extremely pleased with this year's applications.

"It's been great," she said, "We are having lots of luck getting qualified applicants."

Since Cabela's posted the position in April, more than 700 people have applied.

Cabela's hopes to have all positions filled by mid-November. New hires will go through a two-week training course and will enjoy the benefits of working at Cabela's, such as a casual, relaxed work environment, an excellent benefits package and the opportunity to work for a company that values employee advancement, according to Fischer.

Fischer said that Cabela's looks for people with good listening and customer service skills, a clear voice and keyboarding skills.

Fischer added that they should be comfortable working in a fast-paced environment while taking orders over the phone and using a computer to enter the information.

Fischer added that they are also targeting people who share Cabela's core values—especially its dedication to customer service.

"Cabela's continues to embrace the original philosophy that the customer is number one—a philosophy instilled by company founders Jim and Dick Cabela. This dedication to the customer is just one of many reasons Cabela's is what the family always knew it could be—a dream come true."

## U.S. Department of Energy to enlighten Tech Park

The Technology Park is prepared to save the world—or at least some money—with the help of the United States Department of Energy (DOE)'s energy assessment program.

In 2008, DOE representatives will visit the Technology Park for one day as part of the Save Energy Now initiative which aims to help American businesses, factories and manufacturing facilities save energy.

DOE conducts energy assessments to help businesses such as the Technology Park identify ways to cut down on their energy use. Depending on the size of the organization, a business can qualify for a one, two or three day assessment.

To participate in the program and find out which assessment the DOE would conduct, a business can logon to <http://www1.eere.energy.gov/industry/saveenergynow/assessments.html> and complete an online form that asks it questions about energy use. Using this information, the DOE arranges an assessment. Though the length of the assessment may vary, the DOE promises that all participants will be eligible for technical assistance from the EERE Information center.

Assessors then tell business owners how to improve their energy consumption practices, improving both the environment and the company's bottom line. By cutting energy consumption, business owners can both reduce carbon emissions, negate the budgetary effects of fluctuating energy prices, and increase productivity.

## Canada and the United States team up in tech race

Canada and the United States share the largest international trade relationship in world history.

It was in the spirit of sharing that Andy Melnyk, Canadian Consul and Trade Commissioner, Technology Partnering, visited the University of Nebraska Technology Park this summer during his three day visit to Nebraska. As trade commissioner, Melnyk works from his office in Minneapolis to promote Canadian companies in the United States and to help American companies to invest in Canada.

Melnyk said he visited the Technology Park to gain a better understanding of the development center's operations and to assess its leaders' interest in joining with the Canadians to build stronger research and economic links with similar Canadian technology clusters.

He said that he felt he accomplished his mission and expressed enthusiasm for the wave of technological advancement that seems to be rising on the horizon, comparing it to the space race.

"We could understand and appreciate the potential of manned space travel and putting satellites in space, but we didn't fully know how to go about it. The same holds true today as researchers attempt to develop gene therapy treatments, or figure out how to build commercially viable bio refineries and cellulosic ethanol plants," Melnyk said.

He said that by forming strong interstate partnerships, both countries could build stronger technology sectors and grow more competitive globally.

"To sustain our future economic well-being, I believe we have to focus on building a strong knowledge-based economy. Competition from other parts of the world is getting stronger and we can best address it by joining forces," he said.

Melnyk added that in this fiercely competitive race, Nebraska has a leg up on some of the competition.

"I was in Nebraska for three days—not long enough in many respects, but long enough to be thoroughly impressed by the extent of research and technology development activity going on in the state," he said.

Melnyk plans to return to Nebraska before the end of the year. He encourages people who want to look into possible research collaboration or technology partnerships with like-minded Canadian organizations to call him at (619) 492-2904 or e-mail him at [andy.melnyk@international.gc.ca](mailto:andy.melnyk@international.gc.ca).

## Donovan discovery brings error to light for Sun Microsystems

Fred Donovan alerted Sun Microsystems to a server vulnerability before it became a major problem for the multimillion dollar company.

Donovan, Chief InfoSec Architect of Donovan Networks, found that encryption protocol errors made the Sun Java System Application Server 9.0\_0.1 susceptible to enumeration.

Donovan was performing security testing of the Operating System 2 when he discovered the potential problem.

He said that setting the Object Request Broker (ORB) of a web server is a common task, but that it is rarely tested. Donovan decided to run a vulnerability test based solely on the encryption capability of the server because the Sun AS is run on a production network and vulnerable ciphers should not be used on internet facing devices.

After discovering the problem, Donovan reported the unusual vulnerability to Sun Microsystems.

"I informed Sun Microsystems of this vulnerability, so it is in their court to make a security fix for the product," Donovan said.

The discovery has demonstrated Donovan Networks' potential in the field of independent data security research, and has won it new recognition in the security community.

Donovan is currently on contract in New York working as the senior application security engineer for a Fortune 500 multi-national corporation.

For more information about the vulnerability, visit the NIST National Vulnerability Database at <http://nvd.nist.gov/nvd.cfm?cvename=CVE-2007-4511> or the Security Focus Vulnerability Database at <http://www.securityfocus.com/archive/1/477315>.

For more information about Donovan Networks, visit the company website at <http://www.donovannetworks.com>.

## TAP celebrates 100th PMP

Technology As Promised, LLC a management training and consulting firm based in Nebraska celebrated the 100th project management professional (PMP®) since January 1, 2005 to attain a PMP after completing its "PMP Prep Courses." The PMP® is the top management certification which is offered by the Project Management Institute.

A complete list of the professionals who completed the program appears below. Technology As Promised also wishes to remind people of its new career enhancing events, which include:

- PMP Workshops (*Omaha – October 29 – November 2 2007; January 21-25, 2008; April 21-25 2008; Lincoln - May 19 – 23, 2008*)
- Effective Virtual Teams, David Kohrell, UNL Technology Park, Lincoln *November 6-7, 2007*
- Communication Skills, Lou Russell, *Lincoln, February 12, 2008*
- Certified Business Analyst Professional Workshop, David Kohrell, *Mahoney State Park, March 11-14, 2008*
- Risk Management, Carl Pritchard, *September 16 (Lincoln) and 17 (Omaha) 2008*

For a complete list of 30 more events that could propel your career in 18 months, Technology as Promised founder David Kohrell urges people to visit [www.tapuniversity.com](http://www.tapuniversity.com).

### List of 100 PMPs

Abdulrahman Haliru, Omaha	Joe Vitale, Omaha	Michelle Musgrave, Hastings
Alex Kreychman, Philadelphia	John Benal, Birmingham	Mike Mankin, Omaha
Andrea Devereaux, San Francisco	John Leaders, Omaha	Mitch Urosevich, Minneapolis
Anna Stambaugh, Lincoln	John Roby, Lincoln	Nikhil Alkari, Omaha
Bob Kohlbek, Omaha	John Shimonek, Lincoln	Randy Pauley, Omaha
Bret Bickel, Omaha	Jon Nelson, Omaha	Randy Sellers, Omaha
Bryan Hoffman, Minneapolis	Judy Ricketts, Omaha	Richard Albright, Omaha
Chris Horihan, Omaha	Karen Hoyt-Stewart, Omaha	Rick Koch, Omaha
Chris Zuerlein, Omaha	Kate Wolfe, Omaha	Rodney Verhoeff, Lincoln
Christine Kines, DC	Kendall Tonjes, Lincoln	Ruth Cook, Omaha
Christopher Kee, Omaha	Kevin Grazier, Omaha	Ryan Christensen, Omaha
Cindy Driscoll, Omaha	Kevin Peterson, Omaha	Ryan McAlexander, Omaha
Connie Pratt, Omaha	Kim Cunningham, Lincoln	Sally Bernardt, Omaha
Dan Graham, San Antonio	Laura Bentley, Omaha	Sandip Ghotikar, Omaha

Dave Baker, Omaha	Laura Whitwer, Lincoln	Santhosh Shetty, Omaha
David Packard, Omaha	Lee Shelton, Omaha	Scott Griffith, Omaha
Dean Warneke, Omaha	Linda Bennett, Miami	Shelly Ritonya, Omaha
Deborah Gerke, Omaha	Linda Romo, San Francisco	Shelley Beard, Omaha
Don Doucet, Lincoln	Linda White, Omaha	Shirley Votrobek, Omaha
Edward Thiele, Omaha	Lloyd Peterson, Omaha	Steve Dennison, Omaha
Geoff Sproat, Omaha	Lori Stevens, Hastings	Steve Wang, Omaha
George Sullivan, Hastings	Margie Brooks, Omaha	Suchita Tamrakar, Omaha
Gerold Holden, Manhattan, KS	Marie Gregoire, Lincoln	Sudesh Gambhir, Omaha
Gnambi Kadjo, Omaha	Mark Hammergren, Omaha	Teresa Reinig, Omaha
Greg Kroll, Omaha	Mark Ward, St Louis	Thomas Adams, Omaha
Gretchen Coghill, Omaha	Marvin Brinkman, Omaha	Tom Simmons, Omaha
James Healey, Lincoln	Mary Regan, Nashville	Tonia Hlavac, Lincoln
Janet Buchanan, Omaha	Matt Wickless, Omaha	Tyler Lavine, Omaha
Jeff Hartsell, Lincoln	Meena Curfman, Lincoln	Tyler Moseman, Omaha
Jennifer Stringer, Omaha	Melissa Maday, Omaha	Vicki Crosby, Omaha
Jessie Blackman, Omaha	Michael George, Omaha	Vince Rea, Lincoln
Joe Ellen Moore, St Louis	Michael Millender, Omaha	Vincent Turner, Omaha
Joe Simpson, Tallahassee		Walter Woodford, Omaha
		Wayne Choat, Lindsay, NE
		William Miller, Omaha

## Cost share program supports intern employment



The Nebraska EPSCoR office is subsidizing another round of its costs-share internship program. The Nebraska Engineering, Science and Technology Internship Program (NESTIP), was created to defray the costs of employing a talented student studying at a Nebraska four-year college or university.

The program reimburses a Nebraska business up to fifty percent of the cost of employing a college or university student studying in Nebraska.

Qualifying students are juniors, seniors or graduate students majoring in science, technology or engineering at one of Nebraska's four-year colleges or universities. The maximum reimbursement is \$5,000 per student per company during a six-month funding period. Application and reimbursement processes are simple, requiring a limited amount of paperwork.

A NESTIP reimbursement request requires a completed student application, a completed company application and a completed mentor form if the student is a graduate student. The funding of requests is a competitive process.

For application forms and a listing of program regulations, visit the Nebraska EPSCoR web site at <http://epscor.unl.edu/programs/> or call (402) 472-8946. For general information about EPSCoR and/or NESTIP, contact Dr. Fred Choobineh, P.E. at [fchoobineh1@unlnotes.unl.edu](mailto:fchoobineh1@unlnotes.unl.edu). For information about applications, contact Nancy Simnitt at [epscor@unl.edu](mailto:epscor@unl.edu).

## Change is the only constant

Since its inception the Technology Park has embraced the strategy of creating a critical mass of technology focused companies in order to create greater value for the firms and Nebraska. In general terms, in order to locate in the Technology Park companies must be engaged in research, development, engineering, testing, or pilot production of a proprietary product or process. The exceptions are for complementary activities which provide essential support services or the headquarters (national or regional) of a technology based firm.

The importance of such an approach was recently brought home by a little publicized report prepared by former Undersecretary of Commerce Robert Shapiro and released by NGO World Growth. Using data from the National Science Foundation, Shapiro and his co-author Nam Pham found that employees at companies which are based upon proprietary products produce 72% more value per employee than their counterparts; make 44% more in salaries and benefits; and that technology intensive companies create jobs at a rate 140% higher than those which are not. The report, "Economic Effects of Intellectual Property - - Intensive Manufacturing in the United States" can be obtained at <http://www.the-value-of-IP.org>.

The Research Advantage portion of Nebraska's tax incentives package enacted last year just became more accessible and of greater value to the state's firms. Companies are no longer required to establish a base year of research expenditures against which subsequent activities are measured. As originally enacted, only those R&D expenditures which constituted an increase over the average of the previous two years' spending were eligible for refundable credits.

Beginning in January, 2007, the State will provide a refundable credit equal to 15% of the federally allowable R&D credit as documented by a company's federal filing. A Nebraska firm expending \$100,000 on eligible R&D would be able to recover 23% through federal and state incentives (a 20% federal tax credit and \$3,000 in State reimbursement). Nebraska's approach provides increased value for early stage firms which may have little or no corporate income tax liability by giving a cash refund for eligible R&D expenses.

Development of the biotechnology industry continues to evolve requiring new strategies for long term success. During the 1980's the first biotech boom largely went bust due to the long lead times (10-12 years for new human drugs) and expense (then estimated to be \$800 million per drug) to launch a new product. Since then the cost of taking a new drug from discovery to full market commercialization has risen to approximately \$1.2 billion and lead time has increased to 14 – 16 years. The cost of meeting regulatory requirements has pushed the threshold for many companies to undertake an IPO to \$100 million in annual revenues. Given those costs, how can a startup biotech company hope to succeed?

The answer in part lies within the results of consolidation in the pharmaceutical industry. Those companies remaining have become so large that their future success lies more in commercialization than discovery allowing them to take advantage of their access to capital and economies of scale in providing later stage clinical trial support, pilot production, manufacturing, marketing, distribution and regulatory compliance services. The overhead associated with maintaining such a structure have made the large pharmaceutical companies less agile and therefore less likely to make the original discoveries of new products. With the growth of interest in biotechnology based products, the large firms are relying increasingly upon growth through alliances and acquisitions rather than organic development.

GlaxoSmithKline, Novartis and Pfizer all have launched dedicated funds for alliances and venture investments. Earlier this year Pfizer opened their own life sciences incubator in LaJolla, California to nurture startups. Over the past four years Pfizer alone has committed approximately \$2.8 billion to funding research alliances with academic institutions and emerging life science firms. Today Pfizer's Strategic Alliances group has 56 people working from 6 locations scouting new technology opportunities; last year they completed approximately 800 agreements.

The implication for Nebraska based biotechnology companies is that success may mean creating strategies which align them with the priorities of well established pharmaceutical firms in order to access the technical and financial support necessary for product development. Local angel investors will need to become more sophisticated in understanding the niche growing companies can occupy. Mergers, acquisitions, stock repurchases and dividends will likely become more common means of achieving investor returns that cashing out through an IPO.

As clichéd as the statement is, the only constant remains change.

# Tech Park Trivia: Computers and the Internet



**1. Which organization is credited with the conception of the Internet:**

- A. The United States Department of Defense
- B. The European Organization for Nuclear Research
- C. Microsoft
- D. Apple

**2. The name of the man who founded Microsoft and is currently the wealthiest person in the world is:**

- A. Bill Gates
- B. William Henry Gates III
- C. Warren Buffet
- D. Albert Gore III

**3. Apple founder Steve Jobs took which course that he believes helped him to revolutionize the PC world?**

- A. History of rock and roll
- B. Calligraphy
- C. Contemporary photography
- D. Fine foods and wine

**4. Doug Engelbart invented the computer mouse in the 1960s. He originally called his device the:**

- A. Mouse.
- B. Z-4 data finder.
- C. Crawler.
- D. X-Y position indicator.

**5. As of 2006, more than \_\_\_\_ people in the United States show signs of addiction to the Internet.**

- A. 1 in 4
- B. 1 in 8
- C. 1 in 10
- D. 1 in 20

**Answers:**

1. (A) The United States Department of Defense
2. (B) William Henry Gates II
3. (B) Calligraphy
4. (D) X-Y Position indicator
5. (B) 1 in 8

## Calendar



### October

#### **Business to Business Tradeshow 2007**

Tuesday, October 23

10:00 AM to 6:00 PM

Location: Pershing Auditorium

Join the Lincoln Chamber of Commerce at the Business to Business Tradeshow, an event that showcases over 160 local businesses in one of the region's largest tradeshows.

#### **Business after Hours with Windstream Communications**

Thursday, October 25

4:30 PM to 6:30 PM

#### **Women in Business Benefit**

Wednesday, October 24

5:00 PM

#### **University of Nebraska Technology Park L.L.C. Executive Committee Meeting**

Tuesday, October 30

5:00 PM

Location: Technology Development Center - Auditorium

### November

#### **Seminar-Employee Benefits: Making Effective decisions**

Thursday, November 1

8:30 AM to 12:00 AM

Employee benefit programs can be intimidating. Trevor Garbers will walk you through the decision making process and help you make the right choice about medical plans and providers.

#### **Midlands Venture Forum Networking Dinner**

Tuesday, November 18

5:30 PM

Our keynote speaker will be Michael D. Hays, Chief Executive Officer and Director, National Research Corporation (NRC). Mr. Hayes founded National Research Corporation in 1981 with the mission of establishing the premier information gathering and analysis organization nationwide.

#### **UNL Venture Plan Competition**

Monday, November 26

8:00 AM

The Nebraska Center for Entrepreneurship proudly announces its 9th Annual UNL Venture Plan Championship sponsored by Alice Dittman and Cornhusker Bank. Inaugurated in 1999, this program is designed to identify, support, and promote students who write business plans that serve as the basis for attracting people and money to their proposed new ventures.

### December

#### **UNL Venture Plan Competition Finals**

Saturday, December 1

8:00 AM