IX.7 Shared Technology Transfer Project (STTP)*

John Griffin (Primary Contact), Tom Bryant
Nicholls State University
906 East First Street
Elkins Hall, Rm. 172
Thibodaux, LA 70301
Phone: (984) 448-4741; Fax: (984) 448-4475
E-mail: jgriff9@hotmail.com

DOE Technology Development Manager:
Christy Cooper
Phone: (202) 586-1885; Fax: (202) 586-9811
E-mail: Christy.Cooper@ee.doe.gov

DOE Project Officer: Paul Bakke
Phone: (303) 275-4916; Fax: (303) 275-4753
E-mail:Paul.Bakke@go.doe.gov

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Houston Advanced Research Center, Houston, TX

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Projected End Date: October 1, 2006

*Congressionally directed project

Objectives

- Catalogue 600 Navy unclassified patents into digestible technology clusters for the end-user industries.
- Certain of these patents which pertain to hydrogen issues will be highlighted as they are uncovered.
- The overarching goal of the Nicholls State University project is to establish a collaborative process with domestic industries for the purpose of sharing Navy-developed technology. The purpose is to educate private sector businesses to increase their awareness of the vast amount of technologies that are available, with an initial focus on technology applications that are related to the Hydrogen, Fuel Cells and Infrastructure Technologies Program of the U.S. Department of Energy.
- Specifically, the project is working to increase the industry awareness of the vast technology resources available to them that have been developed with taxpayer funding. NAVSEA-Carderock and the Houston Advanced Research Center (HARC) are teaming with Nicholls State University to catalog NAVSEA-Carderock unclassified technologies, rating the level of readiness of the technologies and establishing a web-based catalog of the technologies. In particular, the catalog contains technology descriptions, including testing summaries and overviews of related presentations, an evaluation of the technology readiness, and other information on the following fields of interest related to hydrogen technologies.

Accomplishments

- Between 7/31/05 and 10/31/05, the number of patents posted on the website rose from 27 to 768. These postings included technology readiness rating and descriptive explanations of technology function.
- Two hurricanes, Katrina and Rita, caused significant interruption in the ability of local industrial members to handle all but the most basic survival tactics. University closings for a time due to evacuation of employees as well as hosting evacuees from the surrounding area curtailed efforts of this research initiative.
- Through a newly forming partnership with the South Louisiana Economic Council (SLEC), this effort will educate affiliated industries on the purpose of the Shared Technology Program. Additional patents will be posted.
- Dr. Tom Bryant presented a paper "Commercialization of Big Government Technology Created in Maryland, through SMEs in Louisiana: Design and Performance Metrics for the Shared Technology Transfer Program" at the 19th Annual UIC Research Symposium on Marketing and Entrepreneurship, San Francisco, August 1-3, 2005.
- Contacts made with various industry groups and companies to set-up various meetings to discuss needs and issues.
- A workshop was held on January 13 in Houston to present various Navy technologies to industry. Approximately 12 different companies were in attendance.
- Working with the South Louisiana Economic Council (SLEC), a small group of students from Nicholls State University will develop presentations and hold a workshop during the quarter. A visit will also be made to NAVSEA-Carderock to follow-up on potential technologies. Also, will continue to work on the technology readiness levels for the catalog.
- The catalog is now populated with over 700 patents.
- A team of six Nicholls State University students and one faculty attended the National Collegiate Inventors & Innovators Alliance (NCIIA) Conference in Portland, OR March 23-March

25. This conference enabled this group to see and experience how technology transfer is accomplished.

- Made presentation on individual company basis to multiple engineers and managers at Oil States, on January 18, 2006, 1180 Mulberry Rd, Houma, Louisiana.
- Made presentation on individual company basis to management at Gulf Island Fabricating, Houma, to Mr. Joe Franklin on January 23, 2006.
- Engaged services of the South Louisiana Economic Council (SLEC) in Houma, LA and Ms. Anne Sonnier who orchestrated an educational session highlighting NAVSEA technologies for area industry. The project was student-led as each student thoroughly reviewed each technology and presented same. Student presenters were: Tobie Benoit, Andrew Gaiennie, Jamie Hodge, Kevin Morales, Scott Olivier, Monique Robbins, and Candy Sikes. Attendees included: members from the Port Of New Orleans; members from the Port of Morgan City; member from the Port of Fourchon, Louisiana; members from Oil States Industries, Inc.; member from The Shaw Group; member from T. Baker Smith; member from Bollinger Shipyards; the Honorable Congressman Charlie Melancon of the 3rd congressional district state of Louisiana; Nicholls State University faculty Drs. Tom Bryant and John Griffin; Research Scientist Dr. Richard Haut of the Houston Advanced Research Center; leader of student research initiative Ms. Anne Sonnier and Director of SLEC, Mr. Vic Lafont; and SLEC's Public Affairs Director Mr. Charles S. Gaiennie. This showcase was held at Nicholls State University's Magnolia Room, Student Union on Monday, May 15, 2006. Its purpose was to educate and inform key maritime and port officials of benefits of the Bilge and Oily Waste Water System, Advanced Crane System, Underwater Hull Husbandry Robot, Non-Destructive Evaluation and the Twisted Rudder.

Introduction

Over 600 Navy patents are available for technology transfer to several industries. Examples of particular interest to the Hydrogen Program include: hydrogen extraction from seawater (production), methane hydrate processing (production), carbon sequestration (production related), extremely high pressure valves and seals (storage), sensors and monitoring systems (storage and/or safety), and advanced power sources such as fuel cells for marine application. Others that may be hydrogen related are yet to be identified.

Approach

The overarching goal of STTP is to establish a collaborative process with domestic industries for the purpose of sharing Navy-developed technology. The purpose is to educate private business sectors to increase the awareness of these businesses to the vast amount of technologies that are available.

Primary organizations involved in the STTP include Nicholls State University, the Houston Advanced Research Center (HARC), and the Naval Sea Systems Command Carderock Division.

Results

Shared Technology Transfer Program Web Site Statistics (courtesy of G. J. Snyder, Harc). These statistics are for the web site at http://www. sharedtechtransfer.org/

It is noteworthy that the Hydrogen Technologies web page had the 6th highest number of visitors.

Which statistics were used?

Statistics were calculated since the launch of the web site on April 15, 2005 up through and including May 31, 2006. Any visits to the site from a computer on the HARC network were removed. Additionally, all traffic due to web spiders (such as Google, MSN, etc) were also removed. Only visits to an actual page or a document (such as a PDF) were calculated. All other files were ignored. Listed below are some summary statistics relating to the Shared Technology Transfer Program web site:

- Total Page Views: 3,743
- Average Page Views per Day: 9.20
- Total Unique Visitors: 280 (See Figures 1 and 2)

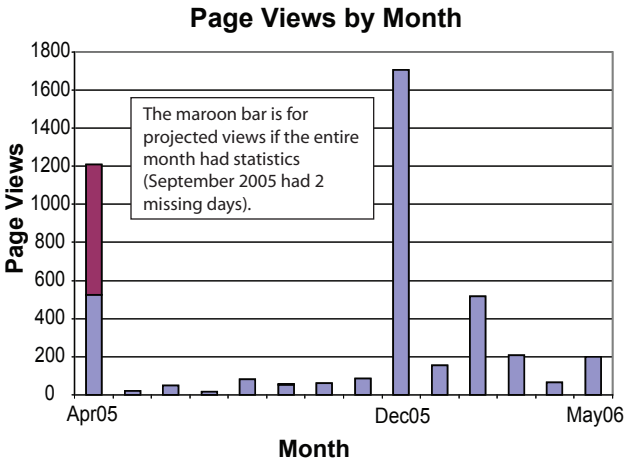

FIGURE 1. Number of Pages (NAVSEA Patents) Viewed per Month April 2005-May 2006

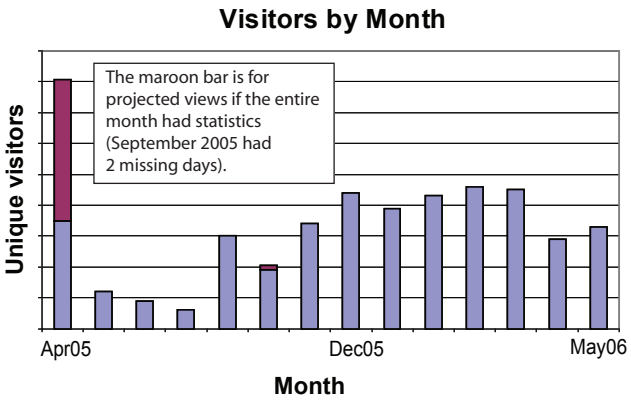

FIGURE 2. Number of Visitors to NAVSEA Patents Website per Month April 2005–May 2006

Which pages did people view?

Listed in Table 1 are all of the pages on the Shared Technology Transfer Program web site and how many visits they have received.

TABLE 1. Pages on the STTR Website and # of Visits

Page Title	# of Visits
[Technology Listing]	2,078
[Category Listing]	752
Home Page	424
User Registration/Sign In	345
Contact Us	45
About the Catalog	43
What is a TRL?	27
Error Page	24
Licensing of Navy Technology PDF	8
Single TRL Definition	7
Total	**3,753**

Listed in Table 2 are the top 15 categories and technologies and how many visits they have received.

TABLE 2. Top 15 STTR Website Categories and # of Visits

Technology Title	# of Visits
Design, Evaluation & Ship	24
Metal Matrix Composites	24
Fuel Cells	21
Advanced Ceramics	19
Subsea Acoustic Transmission	17
Machinery Design Optimization	16
Grapple Anchor Device for	14
Non-Destructive Evaluation	14
Anti-Sway Device for Hoists & Cranes	13
Piezoelectric Polymer Antifouling	12
Fatigue and Crack Growth	11
Piezoelectric Polymer Antifouling	11
Paints and Coatings-General	10
Electrolytic Disinfectant System	9
Method for In-Situ Casting of Fire	9
Other	1,854
Total	**2,078**

How did people get to the site?

Whenever someone clicks a link to go to the Shared Technology Transfer Program web site, we can usually tell where they are coming from. This also includes when people search using search engines. However, this does not include anyone who has the site bookmarked, typed it in directly, or got to it through an outside program (such as Outlook or any other stand-alone mail client).

Search Engines

Typically someone will get to our site through a search engine. Listed in Table 3 are search engines and how often they were used to get to the Shared Technology Transfer Program web site.

TABLE 3. Search Engine Access to STTR

Search Engine	# of Times Used
Google (www.google.com)	65
Google International	51
MSN (search.msn.com)	6
Other	6
Total	**128**

Conclusions and Future Directions

No technical conclusions as this project had educational objectives.

FY 2006 Publications/Presentations

1. Dr. Tom Bryant presented a paper "Commercialization of Big Government Technology Created in Maryland, through SMEs in Louisiana: Design and Performance Metrics for the Shared Technology Transfer Program" at the

19th Annual UIC Research Symposium on Marketing and Entrepreneurship, San Francisco, August 1-3, 2005.

2. A workshop was held on January 13 in Houston to present various Navy technologies to industry. Approximately 12 different companies were in attendance.

3. In addition to #2 above, during the first quarter of 2006, five presentations were made in the greater Houston area to inform local businesses about the technologies available from NAVSEA Carderock.

4. Made presentation on individual company basis to multiple engineers and managers at Oil States, on January 18, 2006, 1180 Mulberry Rd, Houma, Louisiana.

5. Made presentation on individual company basis to management at Gulf Island Fabricating, Houma, to Mr. Joe Franklin on January 23, 2006.

6. Made presentation Monday, May 15, 2006 to Port of New Orleans, members from the Port of Morgan City, member from the Port of Fourchon, Louisiana, members from Oil States Industries, Inc., member from The Shaw Group, member from T. Baker Smith, member from Bollinger Shipyards, the Honorable Congressman Charlie Melancon of the 3rd congressional district state of Louisiana, Nicholls State University faculty Drs. Tom Bryant and John Griffin, Research Scientist Dr. Richard Haut of the Houston Advanced Research Center.