



**BioBusiness Alliance  
of Minnesota**

June 30, 2008

Dan McElroy  
Commissioner  
Department of Employment and Economic Development  
1<sup>st</sup> National Bank Building  
332 Minnesota St., Suite E200  
St. Paul, MN 55101-1351

RE: Contract # SPAP-07-0010-P-FY08

Dear Commissioner McElroy,

As part of the grant appropriation from the 2007 Minnesota Legislature, The BioBusiness Alliance of Minnesota is required to submit to DEED a report on the budgeted expenditure by June 30<sup>th</sup>. The attached report summarizes our work from July 1, 2007 through June 30, 2008.

We are pleased to be collaborating with government, academia and the private sector to help make Minnesota a better place to invest in biobusiness. We look forward to continuing to work closely with you and your department in the future.

Warm regards,

Dale Wahlstrom  
CEO/Acting Chairman  
The BioBusiness Alliance of Minnesota

Attachment

Cc:

Senator Tarryl Clark, Vice Chair, Rules and Administration  
Senator James Metzen, Chair, Business, Industry & Jobs  
Senator Ellen Anderson, Chair, Environment, Energy and Natural Resources Budget Division  
Senator Jim Vickerman, Chair, Finance – Agriculture and Veterans Budget and Policy Division  
Senator David Tomassoni, Chair, Finance – Economic Development Budget Division

Representative Margaret Anderson Kelliher, Speaker of the House  
Representative Tom Rukavina, Chair, Higher Education and Work Force Development Policy and Finance  
Representative Lyndon Carlson, Chair, Finance  
Representative Al Juhnke, Agriculture, Rural Economies and Veteran Affairs  
Representative Jean Wagenius, Environment and Natural Resources Finance  
Representative Mary Ellen Otremba, Chair, Agriculture, Rural Economies and Veterans Affairs  
Representative Kent Eken, Chair, Environment  
Representative Tim Mahoney, Chair, Biosciences and Emerging Technologies

Kevin McKinnon, DEED

**THE BIOBUSINESS ALLIANCE OF MINNESOTA**  
**ANNUAL GRANT REPORT JUNE 30, 2008**  
 STATE OF MINNESOTA  
 DEPARTMENT OF EMPLOYMENT AND ECONOMIC DEVELOPMENT  
 BUSINESS AND COMMUNITY DEVELOPMENT DIVISION

**Re: Special Appropriation Grant Agreement**  
**SPAP-07-0010-P-FY08**

AGENCY	VENDOR NUMBER	OBJECT CODE	TOTAL AMOUNT
B22100			\$1,750,000

**General Highlights**

The BioBusiness Alliance of Minnesota has made steady progress on our agreed upon deliverables. The detailed progress is spelled out in the deliverable section of this report but in general, the current partnership with the state of Minnesota, Department of Employment and Economic Development (DEED), has lead to several key accomplishments:

- Completed the initial “straw-man” papers for Destination 2025, a visioning document with a roadmap for the state to move forward in six key markets of bioscience -Medical Devices, Biologics and BioPharma, Animal Health, Food, Renewable Energy and Renewable Materials. We are on track to release the white papers in January of 2009.
- Completed the first-of-its-kind model for the integration of the different sources of renewable energy into a sustainable system.
- Supported extensive education of legislative leaders and others to help them better understand the ability of the investments at the University of Minnesota to support private sector leverage and investment.
- Worked with GSP Consulting to produce a comparative state report of bio investments. The report, *Comparative State of Bio Investments: An Analysis of Bioscience Investment from 2002-2006 in California, Iowa, Massachusetts, Minnesota, North Carolina, Ohio, Utah, Washington and Wisconsin*, will be completed by September of 2008.
- Established the Minnesota BioBusiness Resource Network (BRN) to connect new and existing businesses to the resources they need to be successful and make doing business in Minnesota successful, pleasant and rewarding experience. Since July 1, 2007, more than 100 companies have asked for support; of these requests, we are providing support to 36 companies and providing five high potential companies with significant staff time and resources.
- The international focused part of the BRN, the International Business Support Center (IBSC,) is working with five companies, three from Sweden, one company from Israel, and one academic consortium from Japan. A Memorandum of Understanding was signed with Uppsala Bio in Sweden. The understanding’s intent is to implement a mutually beneficial relationship aimed at providing support to our high-growth companies, thereby, improving the probability of success at becoming successful global competitors.

- Lead the efforts to secure Sweden’s International Renewable Energy Technology Institute for Minnesota. This initiative is designed to enhance the economic relationship between Sweden and the United States and grow Minnesota’s renewable energy capabilities. This non-profit Institute, one of two currently running in the United States, will be located on the campus of Minnesota State University, Mankato.
- Partnered with local leaders, private sector partners and others in southeastern Minnesota to build understanding of the Elk Run Development in Pine Island, Minnesota. The first phase of the development will include the building of a Biotechnology Center which will fill a hole in Minnesota’s ability to commercialize bioscience research locally. This unique facility will be a magnet for local research and attract businesses from other geographies as well.
- Developed the Minnesota Life Science Community project, which has become the basis of all of our activity and rallying message for the entire state. Work to date includes the creation of a set of definitions for the biosciences in order to have common framework for discussing a community’s bioscience assets. Also, conducted High-Level Asset Inventory meetings throughout the state to help communities discover their bioscience assets; 14 of those meetings have been completed so far.
- Partnered with the Minnesota Department of Employment and Economic Development, LifeScience Alley and other industry and academic volunteers to enhance the Minnesota display and presentation at the International BIO 2008 Conference in San Diego to create a highly professional, customer-focused Minnesota “bio” brand that promotes the state’s bio-related capabilities and opportunities.
- Awarded a \$500,000 grant in December 2007 from the McKnight Foundation for the expansion of the BioBusiness Resource Network (BRN) into Greater Minnesota. Working with the Southern Minnesota Initiative Foundation (SMIF), the BioBusiness Alliance is piloting the regional BRN model in southern Minnesota, and then transferring this model throughout the state.

A more detailed accounting of the deliverables agreed upon is provided in the body of this report.

**Financials – Match Requirements**

This report provides an update as to the progress made on the match requirement. The June 30, 2009 final report will demonstrate a minimum 1:1 match to the Legislative grant.

The financial requirements of the grant are as follows:

Approved Project Activities	State Entity	Matching Funds	Total Project Cost
Statewide Industry Assessment	\$ 140,000	\$ 140,000	\$ 280,000
Destination 2025	\$ 805,000	\$ 805,000	\$ 1,610,000
Creation of BioBusiness Resource Network	\$ 805,000	\$ 805,000	\$ 1,610,000
Total	\$1,750,000	\$1,750,000	\$ 3,500,000

The current status of the funds raised in support of the matching requirements is as follows:

Approved Project Activities	State funds to-date	Matching Cash Raised to-date	Matching In-kind Support Raised to-date	Total matching support secured to-date
Statewide Industry Assessment	\$76,000	\$41,500	\$31,186	\$72,686
Destination 2025	\$437,000	\$113,000	\$139,144	\$252,144
Creation of BioBusiness Resource Network	\$437,000	\$525,000	\$36,300	\$561,300
Total	\$950,000	\$679,500	\$206,630	\$886,130

The BioBusiness Alliance is on track to be in full compliance with the 1:1 matching requirements by the final report deadline of June 30, 2009 because:

- \$400,000+ in requests for support are pending and have a high likelihood of being realized
- Additional funding prospects have been identified and will be approached
- A program to secure \$400,000 in Destination 2025 sponsorships has been launched
- In-kind support will continue to grow and is expected to be in excess of \$200,000+.

#### **Deliverables - Review**

The terms of the grant held The BioBusiness Alliance of Minnesota accountable in the following areas:

- 1) Completion and periodic updating of a statewide bioscience business industry assessment of business technology enterprises and Minnesota's competitive position employing annual updates to federal industry classification data.
- 2) Long-term strategic planning that includes projections of market changes resulting from developments in biotechnology and the development of 20-year goals, strategies, and identified objectives for renewable energy, medical devices, biopharma, and biologics business development in Minnesota.
- 3) Design and construction of a Minnesota focused bioscience business model to test competing strategies and scenarios, evaluate options, and forecast outcomes.
- 4) Creation of a bioscience business resource network that includes development of a statewide bioscience business economic development framework to encourage bioscience business development and encourage spin-off activities, attract bioscience business location or expansion in Minnesota, and establish a local capability to support strategic system level planning for industry, government, and academia.

#### **Deliverables - Specifics**

1. **Completion and periodic updating of a statewide bioscience business industry assessment of business technology enterprises and Minnesota's competitive position employing annual updates to federal industry classification data.**

The initial Statewide Industry Assessment, *Biobusiness: Minnesota's Present Position and Future Prospects*, was completed and distributed in late 2006. In August 2007, the BioBusiness Alliance began work on a report to update Minnesota's bioscience business industry as it compared to other states and their investments in bio. The report, *Comparative State of Bio Investments: An Analysis of Bioscience Investment from 2002-2006 in California, Iowa, Massachusetts, Minnesota, North Carolina, Ohio, Utah, Washington and Wisconsin*, is in final review and is expected to be released later in 2008. Recipients of the report will include the State Legislature, the Office of the Governor

and the Minnesota Department of Employment and Economic Development. This report is expected to be a useful tool in identifying and comparing Minnesota's relative strengths and weaknesses in investing to support bio economic development.

**2. Long-term strategic planning that includes projections of market changes resulting from developments in biotechnology and the development of 20-year goals, strategies, and identified objectives for renewable energy, medical devices, biopharma, and biologics business development in Minnesota.**

Our top organizational initiative for 2007-2008 is the development of a visioning document with a roadmap for the state to move forward in six key markets of bioscience (Medical Devices, Biologics and BioPharma, Animal Health, Food, Renewable Energy and Renewable Materials). This visioning document is entitled Destination 2025 and we have teamed up with Deloitte Consulting, LLP to complete the research and writing for it. The basis of the initiative is delivering for each market an industry white paper, a vision document for Minnesota and a roadmap for Minnesota stakeholders that identifies the opportunities, gaps and needs to be addressed.

The process Destination 2025 is using to complete the six industry white papers is thorough and the results are expected to provide specific recommendations usable by all of the BioBusiness Alliance's public, private and academic partners. The Destination 2025 process is described in Table 1.

(Table 1)

<b>Market Output by Step</b>	<b>Expected output from step</b>	<b>Participants in Step</b>
<b>Step 1</b>	"Straw-man" document written by recognized industry experts	Thought leader(s)
<b>Step 2</b>	Global reviews and content critique of straw-man document by key thought leaders on the topic.	A minimum of 10 global industry thought-leaders.
<b>Step 3</b>	Further enhanced market knowledge via electronic survey to 200-400 participants per market. Content from steps 1 & 2 are used to prepare an electronic survey.	Leaders and decision-makers in academia, business, and government.
<b>Step 4</b>	Industry white papers and Minnesota-specific vision documents written.	Staff and key volunteers.
<b>Step 5</b>	Socialize the action plans and recommendations across the state. With stakeholders focus on actions to assist job creation.	BioBusiness Alliance led stakeholder interactions

Step one has been completed for all six markets and Steps two and three are in progress. The numbers of volunteers actively engaged in each step to date are:

- Six local or nationally recognized market area experts have completed the industry "straw man" documents.
- Sixty (ten per market) additional local, national and, in some cases, international industry thought leaders have reviewed and provided feed back to the "straw man" documents.

At the completion of the Destination 2025 process, nearly 300 volunteers from across the six markets in academia, government and industry will have been engaged.

The work on Destination 2025 will be completed in early winter of 2008 and will be released in January of 2009.

**3. Design and construction of a Minnesota focused bioscience business model to test competing strategies and scenarios, evaluate options, and forecast outcomes.**

Knowledge based economic development is requiring a re-examination of the traditional theories and practices regarding business development and support. Over simplified, the traditional Cluster Model requires local concentrations on the critical mass of all or most all elements of the business. The Knowledge and Competency Model recognizes economic growth is dependent on business connections that are global in nature and critical concentrations of specific elements of a business are dispersed and linked/networked to other locations around the state, the region and the world.

The BioBusiness Alliance has developed the Minnesota Life Science Community concept, whose mission is to "Drive growth of a knowledge based economy." The critical components to developing Minnesota's Life Science Community are:

- Developing, creating and identifying champions with significant technical and industry knowledge
- Inventorying the state's bioscience business strengths and capabilities
- Providing academic support for work force development, research and technology
- Business Acceleration capability (money, management, technical know-how)
- Appropriate policies
- A strategy and community that supports it.

These six components are the tools by which Minnesota's success in bioscience business development and growth can be evaluated. These criteria will also be used to measure competing business development strategies, reviewing business development options and outcomes.

In addition to the Life Science Community model, the BioBusiness Alliance has partnered with Sandia National Laboratories and Forio Business Simulations to build a **System Dynamic (SD) Model of Minnesota's Renewable Energy Economy**. The model was commissioned to help our community make better informed decisions and guide investment strategies in renewable energy. It runs on commercially available software, Vensim, and allows the user to test economic and policy scenarios for the future of Minnesota's renewable energy economy. In the fall of 2008 the model will be accessible online via a password protected website.

Realizing the SD model use for renewable energy has applications across the bioscience business field and has lead to the creation of The Modeling Center, a joint effort between the Biobusiness Alliance and the University of Minnesota's Hubert H. Humphrey School of Public Policy, to build a capability for System Dynamics (SD) modeling in Minnesota. The goal is to create a structure for teaching SD at the undergraduate, graduate and professional education levels. A strong local capability for SD modeling will be a valuable tool for private industry, academia and government to test economic and policy scenarios.

- 4. Creation of a bioscience business resource network that includes development of a statewide bioscience business economic development framework to encourage bioscience business development and encourage spin-off activities, attract bioscience business location or expansion in Minnesota, and establish a local capability to support strategic system level planning for industry, government, and academia.**

**BioBusiness Resource Network (BRN).**

The BioBusiness Resource Network (BRN) has been created and its goal is to make doing business in Minnesota a pleasant and rewarding experience by supporting bioscience companies as they seek

to expand, start-up or relocate in Minnesota, thereby growing the bioscience economy and community in Minnesota to enhance our position as a leader in the bioscience industry. Since July 1, 2007, the Alliance has received requests from more than 100 companies for support; of these requests, we are providing support to 34 companies and have been providing five high potential companies with significant staff time and resources. The BioBusiness Alliance continues to build upon its network of service providers and partner organizations that can support bioscience companies in Minnesota in order to increase its capacity to assist.

The BRN has also established relationships with three venture capital firms who have agreed to meet with selected BRN companies to strategize about potential funding opportunities for the company, assist in polishing messages when asking for support, and make connections for our companies to additional funding resources. We are also working to establish local capability to fund early stage bioscience companies across the state. To date, we have had meetings with five local funding organizations to discuss the bioscience industry and have their agreement to continue the conversation about how best to support the bioscience industry in Minnesota.

#### **BRN - International Business Development**

The international focused part of the BRN is the International Business Support Center (IBSC). IBSC is currently working with five companies, three from Sweden, one company from Israel, and one academic consortium from Japan.

A client intake process has been developed and formal relationships with Uppsala BIO and the foundation for cooperation between the universities in Uppsala, the business sector and the community (STUNS) in Sweden are being created. A site visit by Uppsala BIO and STUNS to Minnesota has resulted in the first new Swedish company expressing interest to come to Minnesota. The visit also led to concrete steps for further developing a relationship to transfer technology between the US and Sweden and to help each others' companies break into the US or European market via our respective geographies. The visit also provided constructive feedback for both the BioBusiness Alliance and the Uppsala systems on how to improve both processes and what additional capabilities need to be built out in each location to better support companies looking to start up operations in each country.

As a result of the visits and ongoing dialogue, a Memorandum of Understanding (MoU) with the Uppsala BIO organization in Sweden was signed to form an action oriented non-binding relationship with Uppsala BIO, or the appropriate agency in the Uppsala region of Sweden. The relationship is intended to leverage the sister city relationship that exists between Uppsala, Sweden and Minneapolis, Minnesota. The relationship is expected to be based on shared trust and commitment to support qualified companies who seek entrance into the European or United States markets, respectively. The goal is to work to establish a plan of action to develop and implement a mutually beneficial relationship with the intent to provide our growing companies a better chance to become successful global competitors.

To date, under the Uppsala BIO Memorandum of Understanding, the IBSC is supporting two companies to enter the U.S. market via Minnesota. (See the attached for our Swedish Relationship Matrix.)

On March 31, 2008 the Kingdom of Sweden's International Renewable Energy Technology Institute (IRETI) Organization Committee chose Minnesota as one of the three states, New York and Georgia being the others, to host a world-class renewable energy technology institute licensed by the Kingdom of Sweden. In Minnesota, IRETI's non-profit center for Renewable Energy will be located on the campus of Minnesota State University – Mankato. This initiative is designed to:

- Enhance the economic relationship between Sweden and the United States.

- Take advantage of the advances Sweden has made in renewable energy bioscience and technology.
- Grow Minnesota's capabilities in the area of renewable energy.
- Be a catalyst for commercializing new business opportunities.

The International Bio Energy Days (IBED) conference in Mankato this fall will be the first opportunity to highlight this new partnership.

In addition to IRETI, ÄFAB USA, a for-profit company, is being formed in conjunction with IRETI as part of the total effort to bring Swedish renewable energy products and technologies to the United States. Until ÄFAB USA is fully organized the IBSC will fulfill this function.

In addition to the relationships in place with Sweden, the IBSC is approaching Japan and Canada next to assist their companies in entering the U.S. market via Minnesota.

### **BRN and Southern Minnesota Initiative Foundation (SMIF) Partnership**

The focus of our partnership with the Southern Minnesota Initiative Foundation (SMIF) has been the building out the BRN regional delivery framework. The partnership is a model of the relationships the BioBusiness Alliance is beginning to build with other regions of Minnesota. In southern Minnesota our work has made significant inroads in the establishment of key infrastructure to support the biosciences in the southern region. Specifically, our work focused on the establishment of relationships between the technology transfer offices of the major institutions in the southern region and in the metro area (Mayo Clinic, Hormel Institute, and the University of Minnesota) to support the commercialization of ideas created within our major research institutions. We have achieved a basic understanding between these major institutions as well as the important role companies in the southern region play. Through their assistance ideas are coming out of the academic sector and turning into a business reality.

As an example, the Mayo Clinic licenses most of its technology to commercialization organizations outside of Minnesota because the state does not have the necessary infrastructure to provide a qualified product that can be used in clinical studies or for scale up to commercial release. Our work focused on two major projects that will increase the southern region's capacity to commercialize pharmaceutical and biologic therapies in the region.

The first project was assisting the developer for the Elk Run project to place a GMP (good manufacturing practices) capability in the southern region to support the pharmaceutical and biologics technology that is developed at the Mayo Clinic, Hormel Institute, University of Minnesota, and private sector companies. Specifically, we did the following to support this company:

- BioBusiness Alliance staff acted as a technical and business advisor to a major development project.
- We assisted in the development and implementation of a strategy to secure key partners and relationships that ultimately are critical to project success.
- We brokered relationships between legislators and other key stakeholders in the region to engage in a discussion of the project goals and the resulting benefit to the southern region and the state.
- We identified and made introductions to technical consultants to support the project.
- We introduced the company to strategic business partners that may rent space from the Company and support its efforts to build the facility.

- Our work led to a widespread conversation regarding the provision of critical infrastructure for the bioscience industry and is poised to leverage a significant amount of private investment into the southern region.

The second project we are involved in is in early stage negotiations with the Mayo Clinic and a local entrepreneur to create a local high technology business resource network specifically to support of southern Minnesota companies.

We have been working with independent researchers on collaboration between researchers at the University of Minnesota and Mayo Clinic. Outcomes of the collaboration were as follows:

- Between August and December 2007, BioBusiness Alliance staff and Southern Minnesota Initiative Foundation (SMIF) staff assisted the company in defining its first product and product pipeline with two additional products.
- BioBusiness Alliance and SMIF set up and facilitated meetings with two potential commercialization partners and identified a third potential commercialization partner, with whom the company met in the first quarter of 2008.
- With SMIF we identified and introduced the company to three potential technical advisors. The technical review board has yet to be finalized due to the fact that the commercialization partner that the company chooses will likely fill this role for the first product.
- We assisted in creating and finalizing the organization structure and business model.
- The company is moving forward with product development efforts on its first product in conjunction with one of the commercialization partners to whom we introduced them.
- Our work over the past five months resulted in speeding up the commercialization process for this company, which brings the company closer to becoming cash flow positive and creating jobs in the southern region.

In December 2007, the BioBusiness Alliance was awarded a \$500,000 to fund a statewide initiative to develop "Regional BioBusiness Resource Network (BRN) Support Centers" to grow biobusiness-related companies in Greater Minnesota. The process has begun to hire a Regional BioBusiness Resource Network (BRN) Specialist to develop and grow the regional support centers throughout the State.

### **Minnesota Life Science Community**

Critical in growing bioscience businesses is identifying what capabilities already exist to support start up and expanding bioscience business in Minnesota. As a first step in creating a Minnesota Life Science Community, BioBusiness Alliance staff members developed a set of definitions for bioscience in order to help community leaders have a better understanding of bioscience/biobusiness, common framework for discussing and discovering the bioscience assets in their communities. (See attached for those definitions.)

The Life Science Community project has involved over 150 regional and economic development leaders from across the state in a dialogue about what is bioscience and what bioscience capabilities they have in their region. Regional and economic development champions supported the BioBusiness Alliance in organizing and hosting the high level inventory meetings that was held in 14 different regions of the state. Involved in these meetings were local bioscience-based business leaders, college/university bioscience faculty, legislative staff, DEED staff, Minnesota Technology, Inc., and AURI, among others. From these high level inventory meetings, greater understanding came forth in the role that each sector plays in supporting the bioscience industry in Minnesota, from workforce training to site selection support, to mentoring of new bioscience startups.

The high level inventory meetings have yielded an additional 888 bioscience capabilities. We now have over 2,000 bio-assets identified in Minnesota across the spectrum of the Life Science Community categories.

Completing the High Level Asset Inventory process furthers the development of the Minnesota Life Science Community and aids the BioBusiness Alliance in creating a transparent industry asset map using Google Earth technology. The map will assist in producing several favorable outcomes:

- Ability to generate instant industry brochures,
- Enables Minnesota to visually compete on par with global best practices,
- Ability to respond quicker to site selection requests.

In general, the developing Minnesota Life Science Community informational and technology capabilities should lead to the accomplishment of several goals:

- Shift focus to Minnesota customers (create, expand, recruit)
- Finding and filling holes in the state's bioscience/biobusiness capabilities
- Create and enhance bioscience public/private partnerships
- Better demonstrate the state's bioscience economic development capabilities
- Leverage existing resources more effectively
- Increase number of biobusiness leads
- Increase number of landed firms in the six identified biobusiness areas
- Compete at a global level more effectively
- Ability to demonstrate the pipeline of knowledge-based jobs for the state.

#### **SUMMARY**

This report demonstrates The BioBusiness Alliance of Minnesota's progress toward the deliverables required in Special Appropriation Grant Agreement SPAP-07-0010-P-FY08. At the completion of the grant in June 2009, the BioBusiness Alliance believes it will have:

- Presented a usable update of Minnesota's competitive bioscience/biobusiness position.
- Provided a visioning document with a roadmap for the state to move forward in six key markets of bioscience: Medical Devices, Biologics and BioPharma, Animal Health, Food, Renewable Energy and Renewable Materials.
- Delivered focused bioscience business models that test competing strategies and scenarios, evaluate options, and forecast outcomes.
- Initiated a statewide long-term bioscience business resource network for economic development that supports strategic system level planning for industry, government, and academia, and encourages bioscience business development and spin-off activities to attract bioscience business location or expansion.
- Catalyzed business growth and job creation in Minnesota's biobusiness sector.