



## Improving Northern Capital - Sustainable Development in the Northern Tier

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***"Success in business requires training and discipline and hard work. But if you're not frightened by these things, the opportunities are just as great today as they ever were."***

**-David Rockefeller-**

### MEETINGS and EVENTS:

Links will provide additional information. Dates for recent additions are in **bold**.

<i>What</i>	<i>Date</i>	<i>Time</i>	<i>Where</i>
<a href="#"><b>Northland Bioneers</b></a>	Nov. 2-4	All Day	Minneapolis
<a href="#"><b>BCEDC Board Meeting</b></a>	Nov. 12 <sup>th</sup>	10:00 am	Washburn Library
<a href="#"><b>Wisconsin Early Stage Symposium</b></a>	Nov. 14-15	All Day	Madison
Agriculture Businesses	Nov. 28 <sup>th</sup>	9:00 – 4:00 PM	Madison
<a href="#"><b>BCEDC Board Meeting</b></a>	Dec. 10 <sup>th</sup>	10:00 am	TBA

## BIONEERS

“Innovation Inspire by Nature” is a subtitle and a theme developed by **Janine Benyus** in her book “Biomimicry.” The book stimulated a movement with multi-site, satellite-enabled annual conventions anchored by the **The Bioneer Conference**. Months ago I had hoped to attend the mid-October conference in California, but events intervened and I didn’t make the trip. Getting to Minneapolis for this weekend’s conventions looks grim. Biology has been my passion for nearly half a century and I must confess that some early interest was kindled by thoughts about how grass clippings might become gold. In my wild dreams, enzymatic modification of crunched up and fermented clippings would create a product like the high-value, biodegradable pyrethrin pesticides. We shouldn’t have to worry about cutting grass here in the northland for another few months, but come spring spaces surrounding our homes will become bio-productive. If only we could discover some way to sell the clippings, cuttings and compost as new value-added

products. My hunch is that the value of the produce would be exceeded by the value of the machinery and the fuel used for harvest – a loser economically.

NUTS!

But hope springs eternal.

A clever and profitable trick would be to add value by finding a low-cost, low-energy process to convert the protein & carbohydrate of biomass to high value biobased products like Viagra or light beer. I pick on these products frequently because they are symbols of fuel for high revenue television advertising campaigns. **Pfizer** and **Anheuser Busch** don't lose money month after month by purchasing advertising for these products. Estimates are that you could conservatively determine revenue by dividing the advertising budget by 0.07 to 0.1. The two companies long histories are testimony to the value of biobased businesses. \$48 billion in revenue in 2006 supported an enormous research effort by Pfizer, reported as a \$7 billion enterprise and located in Europe, Japan and of course, the USA. That research generates the products that will fuel future revenue. Anheuser-Busch supports annual revenue of \$15 billion with a multitude of products flanking Bud Light and energized by advertising as powerful as its Clydesdales. Research is no longer conspicuously supported at Anheuser-Busch, but it is no accident that many Nobel Prize winners in genetics began their studies on brewer's yeast, *Saccharomyces cerevisiae*, at Washington University located in the St.Louis, Missouri home of Anheuser-Busch.

Developing new products is central to biobased business research, but bioprocess engineering is critically important to successful manufacturing of biobased products. Wasteful throughput of materials is increasingly unacceptable in any manufacturing process. Lessons from the eco-efficiency of systems of living organisms, where waste is virtually unknown, will increasingly guide our designs of both products and processes. That research is possible, though unlikely, here in the northland, but we should keep close tabs on ideas from global research that we might apply.

Bioneers are pioneers in developing a new economy based on lessons learned from the study of living systems. We can, and should, foster our own Northern Tier bioneers.

## **LIGHTER SIDE:**

**As with most jokes the original author is unknown. Whoever you are; "Thanks!" Names, when added, are intended to tease the innocent.**

A mathematician, an accountant and an economist apply for the same job.

The interviewer calls in the mathematician and asks "What do two plus two equal?" The mathematician replies "Four." The interviewer asks "Four, exactly?" The mathematician looks at the interviewer incredulously and says "Yes, four, exactly."

Then the interviewer calls in the accountant and asks the same question "What do two plus two equal?" The accountant says "On average, four - give or take ten percent, but on average, four."

Then the interviewer calls in the economist and poses the same question "What do two plus two equal?" The economist gets up, locks the door, closes the shade, sits down next to the interviewer and says "What do you want it to equal?"

Take care and have a great weekend!

/BRUCE

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*In addition Bruce maintains the following affiliations:*

[Bayfield County Economic Development Corporation](#), (BCEDC) *Director*

[Inland Sea Society](#), (ISS) *Director*

[Lake Superior Binational Forum](#), (LSBF) *US Delegation Co-Chair*

[Raindrop Garden Gallery](#) (RGG) *Co-owner*

[IDEA Consortium LLC](#), *Owner*

[Chequamegon Institute, Inc.](#) *Initial Registered Agent*

[Coalition for Eco-Industrial Development](#), (CEID) *Work Group Member*

[Northwest Wisconsin Workforce Investment Board](#), (WIB) *Member*

*The encircled fractal triangle represents an integrated cluster of seven ideas – economics, ecology, equity, ethics, experience, education and energy – that may be considered a core for sustainability studies. Bruce is available to present illustrated lectures and facilitate discussions about role of education in Industrial Ecology, Sustainable Development and the Sustainability Revolution.*