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A NOT-FOR-PROFIT ORGANIZATION DEDICATED TO BIOMEDICAL RESEARCH

# TBRI ANNUAL RECEPTION

## Speaker Highlights

*Judy Morris-Hardy, Emcee and TBRI Board member*

For all who were able to attend our Annual Community Reception at the Feather Sound Country Club in Clearwater on October 30, 2007, we say Thank You! At this year's very well-attended event, friends and supporters of the Institute were treated to an in-depth and engaging talk by Dr. David Eisenberg, Director of the Division for Research and Education in Complementary and Integrative Medical Therapies at Harvard Medical School.

Dr. Eisenberg's presentation, entitled "Integrating Scientific Technologies to Evaluate Herbal Remedies," served as an informative introduction to the field of Integrative Medicine (IM) that covered its evolution from early times to the present [please see the Historical Development of IM in the U.S. on page 5] and he discussed the issues and challenges that IM currently faces. The following recap summarizes his remarks:

### What is Integrative Medicine (IM)?

Integrative Medicine can be defined as the availability and use of the best of both conventional therapies and evidenced-based complementary and alternative medical therapies (CAMs) to meet the needs of the patient without a strong bias for one modality over the other. Common CAMs in use today include herbs and supplements (our pine cone extract research would fall in this category), prayer, mind-body techniques, chiropractic, acupuncture, yoga, massage, and diet therapies.

### How has it developed?

The concept of IM emerged about 30 years ago with interest in mind/body healing, Eastern spirituality and energy healing (which are not the same as CAM) in the 1970s. IM consists of conventional medical options along with CAM therapies that are understood and recommended interdependently according to the needs of the patient. IM is relationship-centered and prevention-based, and patients are active partners in health care ("self-care"). IM views patients as whole persons and seeks to optimize the individual's innate healing capacity.



**Dr. David Eisenberg**  
Keynote Speaker

### In Memoriam *Ann Groover Hines*



October 16, 1924 -  
February 3, 2008

Wife of our former  
Board Chair, Andy Hines

*We are grateful  
for the gifts  
made to TBRI in  
Ann's memory*

At the present time, there is a simultaneous increase in the use of complementary and alternative medicine and in the scientific scrutiny of IM. What drives this increase in interest? Possibly it is due to current problems commonly associated with the practice of conventional health care such as high costs, impersonal care, profit motive, and a loss of trust.

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# President's Message

Dr. Akiko Tanaka

## Prevention is better than cure - Desiderius Erasmus

Much of Eastern tradition and culture is based on the search for simple, practical ways to promote health and prevent disease—such as the use of plant extracts. In early times, plants were often the only “medicines” readily available to the common person. This

practice is now the focus of the emerging modern field of Integrative Medicine (IM), which is beginning to reveal the scientific basis for the usefulness of such preparations.

By applying the modern technology of Western science, we seek to explain the wisdom embedded in the practice of Eastern medicine. While TBRI's research on a pine cone extract had its beginnings almost two decades ago, it should be noted that the health benefits of a pine cone extract were first confirmed and documented in 500 A.D. by Greek physicians.

From this study, scientists at TBRI have made a significant discovery... the pine cone extract appears to optimize the ability of the body's immune system to fight off cancers and other deadly diseases. The active chemical component of the extract has been termed PPC. Studied in a variety of experimental systems, PPC has been shown to have anti-bacterial, anti-viral and anti-cancer properties.

### PPC's impact on immune cells:

PPC has been shown to enhance the functioning of certain immune cells in human and animal systems. Dr. Guy Bradley's lab at TBRI has demonstrated that PPC is capable of promoting, in a dose-dependent manner, the rapid differentiation of human peripheral

blood mononuclear cells (PBMC) into mature dendritic cells (DC). DC are known to be the most potent antigen-presenting cells of the immune system. As soon as DC recognize a foreign invader or abnormality (such as an infectious agent, cancer or an immune disorder), they instruct the “troops” (other immune cells) to eradicate the problem. The ability of DC to detect, process and present foreign material (antigens) to other cells of the immune system is of central importance in eliciting an effective immune response against bacterial- and viral-infected cells and cancer cells. Furthermore, scientists believe that harnessing the power of DC will prove to be quite useful in developing a new generation of more refined and effective vaccines.

### How does PPC work?

In our research, human cell cultures have been exposed to PPC to study the possible molecular targets of PPC. The current results indicate that PPC hinders the functioning of a very specific molecular pathway in several cell lines. This pathway has been described in numerous scientific publications to be intimately involved in the development and progression of inflammatory diseases and cancer. Experiments to identify the precise molecular targets of PPC are currently underway. Based on our recent insightful findings, we were invited to present our results at an international scientific conference in Kyoto, Japan last November.

While our findings are exciting and encouraging, so much more remains to be done. That is why your support, both moral and financial, is so important to me as President of TBRI.

Thank you so much. ■

## Speaker Highlights Continued from page 1

### The current status of Integrative Medicine in the U.S.

The use of CAM is very significant in the U.S., impacting many people and involving large expenditures of money. It has been estimated that anywhere from 6.5% to 43% of the U.S. population has used a form of such therapy, including the regular use of herbal preparations. There is also an increasing familiarity and acceptance of CAM by physicians in the U.S. It has been estimated that expenditures on CAM therapies totaled between \$34-47 billion (1997 estimate)<sup>1,2</sup>.

<sup>1</sup>Eisenberg DM, Davis RB, Ettner SL, et al. Trends in alternative medicine use in the United States, 1990-1997: results of a follow up national survey. JAMA. 1998;280(18):1569-1575.

<sup>2</sup>Centers for Medicare and Medicaid Services. 1997 National Health Expenditures Survey. Centers for Medicare and Medicaid Services web site. Available at [www.cms.hhs.gov/statistics/nhe](http://www.cms.hhs.gov/statistics/nhe).

In terms of the scientific scrutiny of Integrative Medicine, the National Center for Complementary and Alternative Medicine (NCCAM), a part of the U.S. National Institutes of Health (NIH), is conducting on-going research studies on various IM approaches such as dietary supplements, chiropractic, homeopathy, naturopathy, electromagnetic effects, Ayurvedic medicine, chelation and spiritual healing.

### Scientific studies and research challenges

According to recent reviews of the scientific literature, there may be some benefits to the use of CAM, such as low-fat or modified fat diets for preventing cardiovascular disease, acupuncture to manage low back pain and recurrent headaches, St. John's wort

to treat mild to moderate depression, herbal and glucosamine therapy for treating osteoarthritis, and nutritional supplements for several neurological conditions. While fundamental questions posed by CAM may expand our understanding of health and disease, there is general agreement that larger and more rigorous studies are needed before definite statements can be made. Some areas that are in particular need of thorough study include:

- Assessing the complex compounds and mixtures found in CAM products
- Evaluating multiple treatment interventions
- The role of patient-practitioner interactions on outcomes
- Individualizing treatment
- Developing methods to improve self-care and promote wellness behaviors

### Dietary supplements

Efforts are needed to scientifically analyze certain botanical extracts, because a number of previous studies have been flawed. As work progresses, the legal status of supplements and the requirements for their production and marketing need to be assessed, especially if FDA drug approval is sought. In Dr. Eisenberg's opinion, botanicals must undergo rigorous study and tighter regulation to protect the consumer.

### TBRI is on the right track

Dr. Eisenberg, in commenting on TBRI's approach to the study of IM, made it a point to say that he was pleased to see that the Institute was applying sound scientific principles in its approach. ■



# Sammy

## The Scientific Spy



### *A Season to Live Smart!*

#### **SAMMY SPEAKS:**

During a holiday bark-a-thon with a Japanese Chin down the street, I happened to learn how humans in Japan celebrate the New Year—with a ceremony called Otoso.

From its earliest beginnings, which have been traced back to ancient China, Otoso has gradually developed into a traditional Japanese ceremony. As many as eight herbs are added to sake, which is a uniquely Japanese alcoholic beverage. Some of the ingredients apparently have been dropped over the centuries, perhaps because they were too potent. However, most of the ingredients have remained the same over the years. They include cinnamon, rhubarb and sansho (a type of Japanese pepper). This drink is believed to ward off some of the more common ailments, such as colds, throughout the New Year.

Centuries ago, Japanese herbal folklore did not enjoy the insight provided by today's scientific research tools, and so they could not explain the apparent health benefits of Otoso. However, today we are gradually beginning to unravel its wisdom:

**CINNAMON:** In traditional Chinese medicine, cinnamon is used to treat such ailments as colds, nausea and diarrhea. It is believed to boost energy and circulation and improve digestion. Recent studies indicate that cinnamon may help regulate blood sugar (A. Khan, et al., *Diabetes Care* 26:3215, 2003; E.J. Verspohl, et al., *Phytotherapy Res.* 19:203, 2005). A chemical component of cinnamon, proanthocyanidin, appears to be similar to insulin because it activates the insulin receptor. However, it was recently found that cinnamon does not appear to improve insulin sensitivity or oral glucose tolerance (K. Vanschoonbeek, et al., *J. Nutr.* 136:977, 2006). It seems that more research on cinnamon supplements is needed before health claims should be made.

Cinnamon may also combat abnormal cholesterol levels and it appears to have antibacterial and antifungal properties, especially against *C. albicans*, a fungus which causes yeast infections and thrush, and *H. pylori*, a bacterium which is responsible for stomach ulcers.

It has been found that the essential oil of cinnamon has excellent anti-inflammatory activities and thus has great potential as an ingredient in natural health products (Y.T. Tung, et al., *Bioresour. Technol.* Sept., 2007).

**RHUBARB:** It is believed that rhubarb was originally introduced to Europe by Marco Polo. It has been used as a folk remedy to treat intestinal problems. Its active chemical constituents, called anthraquinones, can act as a laxative by stimulating bowel movements. Rhubarb also contains tannins (which are also major components found in green tea), which are believed to reduce inflammation of the colon and help relieve diarrhea. Health food capsules generally contain a rhubarb variant, *rheum palmatum*, which is not to be confused with the common rhubarb found in the grocery store. At any rate, rhubarb is a rich source of dietary fiber, vitamin C, calcium and potassium. I doubt it will ever become my favorite dog treat, but it can be used as part of a weight loss program since it is very low in calories. [Note to canines and humans: do not eat rhubarb leaves, which are toxic.]

A recent study indicated that an extract of *rheum palmatum* can inhibit the hepatitis B virus (HBV). This active component may one day comprise a new family of anti-HBV drugs to treat HBV infection (Z. Li, et al., *Chemotherapy* 53:320, 2007).

**SAKE:** Made from rice, sake is an alcoholic beverage unique to Japan. It dates back to at least the 3rd Century A.D. Sake is made from rice, rice koji (the mold used to convert the starch in rice into fermentable sugars) and water by fermentation and filtration.

Alcohol appears to slow down the accumulation of fat deposits in the arteries, mainly by increasing levels of "good" cholesterol (HDL). In a sense, alcohol "thins" the blood, protecting against heart disease. Alcohol also apparently has an antioxidant effect, protecting the arteries from damage and reducing the incidence of blood clots, thus reducing the risk of stroke.

A study conducted by the Japanese Ministry of Health and Welfare from 1990 to 1996 involved about 20,000 people aged 40 to 59, both male and female. The data indicated that the participants who consumed a small amount of sake had the lowest rate of death from cancer compared to those consuming no alcohol and those consuming excessive amounts.

**Sammy's Smart Suggestion:** *Be aware that excess consumption of any food, plant extract or beverage may lead to health problems. Also, consult with your doctor for advice and don't suddenly decide to replace any prescription medications with folk remedies. And remember, alcohol should be consumed only in moderation, if at all—and none for Fido!*

Sammy Bow-wow for now ..... 



# Comments From Those Attending The 2007 Annual Community Reception

*This year's TBRI Annual Community Reception featuring Dr. David Eisenberg was truly a memorable experience. From beginning to end, he captured the audience with his dry wit and conveyed his scientific message on a level that everyone in the room could understand. For those of us who are proponents of complementary and alternative medical therapies, Dr. Eisenberg's willingness to promote health practices such as yoga, massage and chiropractic was a cleansing breath of fresh air.*

*It is reassuring to know that higher research institutions, such as Harvard University and TBRI, are involved in the examination of herbal compounds for their potential therapeutic properties. Dr. Eisenberg's discussion regarding the research practices used to evaluate their effectiveness and quality assurance was fascinating.*

-Laurel Dietrich (Brooksville, FL)

*Dr. David Eisenberg's speech at the Annual Reception for TBRI was informative and warmly delivered. He talked about the excellent facilities and the research methods used at the Institute that were as fine as he has ever seen. He congratulated Dr. Tanaka for her research efforts and her successes. It was apparent that Dr. Eisenberg had a great deal of admiration and respect for Dr. Tanaka and the work that was being accomplished at the Institute. Dr. Eisenberg's praise for Dr. Tanaka's success and her dedication made us, her volunteers and supporters, so proud of her on this night.*

-Evangeline Kelly (Dallas, Texas)



Rep. Jim Frishe

*To hear him [Dr. Eisenberg] say, 'You are doing it right... Your research is being done correctly...Your scientists are conducting their experiments correctly...Your leader, Dr. Tanaka, is conducting the research and is on the right track...' is an inspiring endorsement by such a respected and recognized expert as Dr. Eisenberg.*

-Gerald Curley (St. Petersburg, FL)

*For those of us who have believed in what the Tampa Bay Research Institute is doing for long, it is nice to have someone as prestigious as Dr. David Eisenberg reaffirm that TBRI is on the cutting edge of health care research. I am delighted to take part in TBRI's Annual Community Reception.*

-Florida Rep. Jim Frishe (R-Dist. 54)

## INVITE A STRANGER

*We are grateful for your support of TBRI,  
and we need more supporters just like you.  
So help us by inviting a friend or neighbor who  
does not know about our research to come and meet  
Dr. Tanaka and her staff at TBRI.*

**Time: 4:00 p.m. Date: Tuesday, May 6, 2008**

Our one-hour program will feature  
Guy Bradley, Ph.D., one of TBRI's Principal Investigators.

Please send your friends, or bring them with you.  
And tell your friends to leave their checkbooks at home.  
Our goal at the gathering is to introduce more people  
to the important work we do.

Please call Diane Tippins at 727-576-6675 ext. 123 or  
e-mail her at [dtippins@tampabayresearch.org](mailto:dtippins@tampabayresearch.org) to make reservations.

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# Historical Development of Integrative Medicine (IM) in the U.S.

## - Up to the mid-1800s:

Medicine is typically practiced by botanical healers, midwives, chiropractors, homeopaths, other lay healers

## - Late 1800s:

Scientific medical education begins; conventional medicine begins to dominate; there is little tolerance for alternative medicine

## - Early to mid-1900s:

Conventional medicine enhances its status (discovery of hormones, antibiotics, vaccines); life expectancy increases, which leads to the emergence of chronic diseases such as arthritis, heart disease, cancer, etc.

## - 1950s:

Industries emerge which specialize in whole foods and dietary supplements, which are touted as potential therapeutic agents

## - 1960s:

Health care costs begin to rise substantially

## - 1970s-1980s:

The counterculture emerges; mind-body awareness gains credibility; the practice of Chinese medicine is widely publicized; high-tech medicine becomes more readily available; managed health care plans are established; wellness programs emerge, which emphasize the importance of diet and lifestyle choices

## - Early 1990s:

The first wave of Integrative Medicine organizations and clinics emerges; political efforts at reforming the health care system stall; scientific studies are published which indicate that some forms of Complementary and Alternative Medicine (CAM) are beneficial; federal funding of CAM research begins to grow substantially

## - 1992:

The NIH Office of Alternative Medicine is established

## - Late 1990s:

The economic impact of IM products and services is much greater than previously thought; many new IM health care centers are formed; nearly half of all medical schools begin to offer some instruction in CAM

## - 1998:

The National Center for Complementary and Alternative Medicine (NCCAM) is established within NIH

## - 2000:

The White House Commission on Complementary and Alternative Medicine Policy (WHCCAMP) is established

## 2000-2003:

The health care crisis intensifies; easily accessed web-based health care information becomes widely available to the layperson; interest grows within the conventional medical community to form collaborations with CAM practitioners

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*Right now, we are getting quite encouraging results that prove the power it has to help our immune system. But there is so much more to learn, to study, to test, to prove...*

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