



Summer 2011

Company Newsletter – Website Edition

CEO Corner

Greetings, Dear Shareholders:

I was asked by the U.S. State Department to serve on the planning commission set up at the National Institutes of Health Foundation, for President Obama's 2010 U.S.-Russian Scientific Exchange Forum. I participated in the first planning conference held in Moscow in April, 2011. It was tremendously rewarding and educational to participate in roundtable discussions at the Russian Academy of Science. Bach's Chairman of the Board of Directors, Dr. Steven Stroup, joined me in this experience. We were able to visit many of the hospitals, institutions and research centers around the city of Moscow. Bach plans on returning in November 2011 for the full conference of potential scientific exchange.

Bach's Russian partner, The Center for Modern Medicine (Medicor), was also invited by us to join and participate in the conference.

Immediately following the Forum, Mr. Alexander Zhilov, Director of Medicor, said:

"The planning forum we participated in helped everybody understand the new way the government does business. We are very excited about Bach opening up the registration and compliance progress with our American counterparts. This experience has allowed us to visit institutions in Russia and participate in conversations that we never would have had access to without Bach Pharma's involvement. This has been an educational experience for us and we want to thank our American partners."



CEO Mark Henry, U.S. Secretary of Health and Human Services Kathleen Sebelius, and Medicor Director Alexander Zhilov meeting in Moscow

Bach's participation in this Forum allowed us to meet with representatives of the Russian Minister of Health as well as several contract research agencies, including Worldwide Clinical Trials Inc., Prudentas, LLC, and Raifarm, LLC. We spent considerable time discussing potential clinical trial activity that can be accomplished much more economically in Russia. We also had the opportunity to meet with the owners of Diplen Manufacturing, the registered developers of the material used in Bach's wound care film. We had numerous meetings with the U.S. National Institutes of Health (in Moscow), the US Ambassador to Russia, and the U.S. Secretary of Health and Human Services (HHS). We continue these discussions and relationships even after we have returned from Russia.



CEO Mark Henry and Chairman Dr. Steven Stroup at the home of the U.S. Ambassador to Russia

Sigma Aldrich invited us to spend several days in Moscow to explore the possibilities of importing Bach's products directly into Russia.

On April 8th and 9th, 2011 Bach was proud to host the company's science seminar at Merrimack College in North Andover, Massachusetts. We are very happy with the venue and the administrative support we received from Merrimack. We would like to express our appreciation to all the people who participated, especially to Barbara Stima and Michele Batchelder for all the work, time, effort and planning that they put into making this a very successful conference. We are very thankful that our Russian partners were able to attend this conference and experience first-hand all of the fantastic work that is going on with GVT[®]. We're also pleased that this conference drew a large crowd including patients, clinicians, caretakers, scientists, researchers, academics, administrators, authors, shareholders, directors, business development representatives from potential pharmaceutical partners, the Massachusetts Bio Council and the Massachusetts Life-Sciences Organization. We are gratified and pleased that these attendees cared enough about the activities within Bach Pharma to attend and contribute to the success of this conference.

Finally, Bach Pharma is very excited and pleased to welcome aboard two interns, one from Merrimack College and one from Boston University. Thanks to the Massachusetts Life Sciences Center Internship Challenge, we were given the opportunity to hire two students in the field of life sciences and have their internships funded by Massachusetts Life Sciences Center. The educational level and understanding of these individuals is exceptional and they have already begun to make an impact on our research at both MD Anderson Cancer Center and Children's Hospital Boston.

Mark O. Henry, CEO

Events

April 8-9 2011

**Scientific Advisory Board Meeting
Merrimack College, North Andover, MA**

The annual Bach Pharma, Inc. Scientific Board Meeting was held April 8th-9th at Merrimack College in North Andover, Massachusetts. The two day meeting consisted of scientific presentations, guest speakers, and social events. It was an excellent method by which to share new discoveries in the research domains surrounding Bach Pharma GVT[®] products. This conference brought together many of Bach's partners, including a special guest Mr. Alexander Zhilov, on his first official visit to the United States.



Dr. Bill Lynn, Mark Henry, Dr. Norm Spencer, Dr. Steve Stroup, Dr. Dan Hightower, and George Schruender at the Board of Director's Meeting

Highlights of the event consisted of talks by Professor Paul K.Y. Wong, PhD, from the University of Texas, MD Anderson Cancer Center, Gerald S. Shadel, PhD, Professor, Departments of Pathology and Genetics, Yale University School of Medicine, Kaye H. Kilburn, MD, who retired from USC Keck School of Medicine, Peter J. Oates, PhD, President Oates Biomedical Consulting, LLC, and William S. Lynn MD, V.P. and Director of Science at Bach Pharma.

Dr. Gerald Shadel spoke about his studies, completed in collaboration with Dr. Paul Wong, on aging with the use of yeast and GVT[®].

An exciting presentation was also made by Kaye Kilburn, MD. Dr. Kilburn's research focused on the use of GVT[®] in people suffering from neurological damage due to exposure to toxic carcinogens. This is some of the first insight into GVT[®] carcinogen therapy in humans. Thus far, Dr. Kilburn has found that the dosing must be very precise; too little or too much makes GVT[®] therapy much less effective. Additionally, Dr. Kilburn noted that although patients begin to feel better a few hours after taking the drug, the regain of full function will require a longer time course of the medication.

Peter J. Oates, PhD brought his own mix of knowledge and humor to the table during his early morning presentation on Saturday. Dr. Oates began his presentation with a history of diabetes back to

the time of the Egyptians—he even showed us how GVT® was written in hieroglyphics! Who knew? On a more serious note, Dr. Oates spoke in-depth about the role of oxidative stress in diabetes and the potential biomarkers of the disease for use in clinical trials.

The Conference culminated with the final presentation given by William S. Lynn, MD. Dr. Lynn summarized the importance of the conference and the continued research involving GVT®. Specifically, Dr. Lynn spoke about the underlying mechanism of GVT®. The drug acts as a redox buffer, maintaining a balance between superoxide reactive oxygen species (ROS) and protons (H⁺). The balance between these is the source of cell energy and may be controlled by obtaining antioxidants, such as with GVT®.

Other featured speakers included: Lauren Laidlaw and Imran Nasrullah from Massachusetts Biotechnology Council; Dr. Susan R. Windham-Bannister, PhD, first President and CEO from the Massachusetts Life Sciences Center; presentations from Albee Messing, VMD, PhD, Professor of Neuropathology, University of Wisconsin – Madison, Gilbert Bernier, PhD, Associate Professor, University of Montreal, Juliet R. Gionfriddo, DVM, and James E. Madl, DVM, PhD, from Colorado State University, and our special guests from Russia.

The presentations were very insightful. The sharing of this information continues to propel the company forward and provides a solid foundation for research in the coming year. Thank you everyone for attending!



Anne Ginivan, Donna Ciampo, Dr. Peter J. Oates, V.P.
Barbara Stima, and Brenda Tedesco at the Bach
Pharma Conference at Merrimack

Upcoming Events

June 14, 2011

Massachusetts Life Sciences Center Internship Challenge Launch Event

Gateway Park, WPI Life Sciences & Bioengineering Center, Worcester, MA

Bach will be attending the Internship Launch Event with Mass Life Science to show the demand for, and value of, this important program which promotes small life science companies and the education of life science students.

June 20, 2011

The Annual Harvard/Paul F. Glenn Symposium on Aging

Harvard Medical School, Boston, MA

Bach has been invited to the annual symposium on aging, which aims to educate the wider research community about advancements in this fast-paced field and to stimulate collaborative research in this area. This will be Bach's 4th year participating in the symposium.

June 22-25, 2011

ASME Summer Bioengineering Conference Nemacolin Woodlands Resort, Farmington, PA

Intern Megan Sperry will be presenting her research in the area of orthopedics & biomechanics during the annual American Society of Mechanical Engineers conference. Her conference abstract is titled "**Characterization of the Porelastic Material Properties of Skeletal Repair Tissues Using Microindentation**".

August 2011

Children's Hospital Boston/Harvard Medical

We are excited to begin work on clinical trials at Children's Hospital Boston for GVT treatment of ataxia-telangiectasia in young patients. We will be working with Dr. Gerard Berry and his team on this important project. This project will also be supported with help from The Longevity Foundation and overseen by Cato Research.

September 8, 2011

Board of Directors Meeting

Nashville, TN

November 2011

U.S.-Russian Scientific Exchange Forum Moscow, RU

CEO Mark O. Henry will return to Russia for the complete conference after months of planning and preparation with the US Department of State in Washington, DC.

April 27, 2012

Annual Shareholders Meeting North Andover, MA

Latest Research

Neurodegeneration in Mouse Models

Dr. Paul K.Y. Wong, along with Dr.'s Jessun Kim, Soo Jin Kim, Xianghong Kuang, and William S. Lynn, MD have been conducting some groundbreaking research with GVT® and its role reducing oxidative stress. The chapter "**Oxidative Stress-Mediated Neurodegeneration: A Tale of Two Models**" has been included in Nova Biomedical's book, *Neurodegeneration: Theory, Disorders and Treatments*. This chapter demonstrates the success that therapeutic intervention with GVT® had on two mice models of neurodegeneration.

Nrf2 Research Publication

M.D. Anderson Cancer Center, Smithville, TX and Texas A&M University, College Station, TX

Dr.'s Reddy, Lungu, Kuang, Stoica, and Wong have conducted research that shows that GVT® upregulates Nrf2, an important protein that regulates the body's antioxidant defenses! An article of this work was recently published in *Neurochemistry International* and it is titled "**Neuroprotective effects of the drug GVT (monosodium luminol) are mediated by the stabilization of Nrf2 in astrocytes.**"

Aging & Oxidative Stress

Dr. Mingshan Yan's presentation to the faculty of the University of Texas

Wrinkles, grey hair, sore joints, and a long list of ailments have been closely associated with aging for centuries. Within the last century, major leaps in science and medicine gave humans the ability to live longer. Now society is reaching a point where the next medical challenge is age-related degeneration.

The world population accepts aging as the natural progression in life, yet so little is known about the *how* and *why* behind the aging process. There are many known factors that lead to aging, yet these widely accepted reasons may be boiled down to three general theories: 1) oxidative stress, 2) immunosenescence, and 3) epigenetic modifications. Dr. Wong and his research team look at these three theories as the main targets of attack in better understanding the pathways that dictate the aging process.

But what do these three theories *really* mean?

The **oxidative stress** theory centers about the idea that free radicals regulate the longevity of an organism. Free radicals, also known as reactive oxygen species (ROS), are produced as a normal byproduct of cell metabolism. Yet, throughout life overproduction may cause damage on the cellular level (i.e. genetic mutations) that leads to functional decline in the form of cancer, diabetes, and other age-related diseases.

The theory of **immunosenescence** refers to the gradual deterioration of the immune system. Recently, this theory has been demonstrated in a

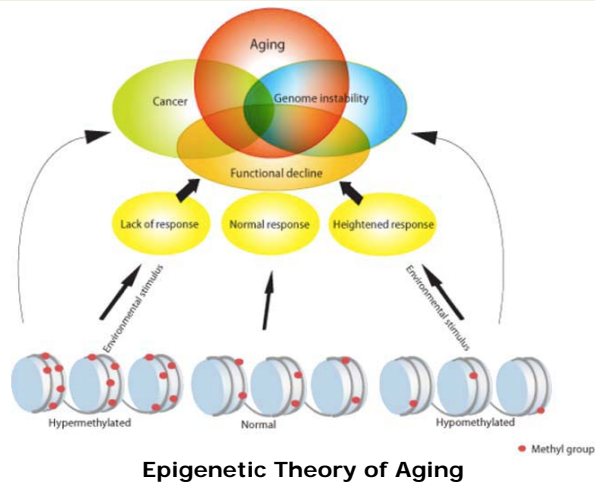
more tangible way through studies of the thymus, an organ located in the chest region and in charge of T-cell production and control. At birth, humans have a very weak immune system and therefore a small thymus. As humans mature during puberty, the thymus reaches peak size and begins a significant decline in size after age 20 until it is nearly an indiscernible organ at age 70.

Finally, **epigenetic modification** is an emergent theory that recognizes both genetic origins (DNA) and environmental factors as influencing gene expression. The interaction of these two factors contributes to the aging process.

The most important concept about aging is that it is an extremely complex process that does not have a single controlling feature. It is the interaction of many factors, including ROS, immune inflammation, environmental influences, and self-monitoring of health. The more we are able to understand these interactions, the better we will be able to tackle age-related diseases and provide a high quality of life for human society.

One of the most important diseases associated with pre-mature aging is Ataxia-telangiectasia (A-T). Ataxia-telangiectasia mutated (*Atm*^{-/-}), the main gene responsible for A-T, is an extremely complex protein kinase that regulates DNA damage and repair, oxidative stress, and cell cycle controls. The Wong group has found that the regulation of two particular elements, ROS and mammalian target of rapamycin (mTOR), plays the biggest role in the aging process and tumorigenesis. These two species have distinct control over the complex web of *Atm*^{-/-} functions and show great promise in mice models for regulating and slowing the progression of pre-mature aging disorders such as A-T.

Research in the area of A-T has shown that studying the biological pathways is a key component to better understanding the aging progression. These pathways are dependent on a multifaceted mix of patient individualities, environmental elements, and the drugs being used to treat the disease. For example, research demonstrates that the process is influenced not only by the drugs themselves, but by dose levels and time of delivery. By better understanding these pathways, drug development and lifestyle choices may be optimized in order to delay the onset of aging.



Dr. Mingshan Yan

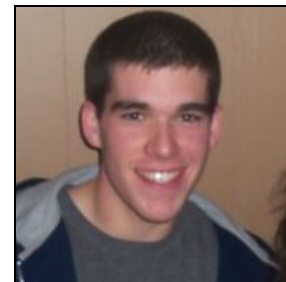
Welcome, Interns!

Bach would like to welcome its two summer interns, Nicholas Hammond and Megan Sperry! Nick and Megan are two students who obtained internships through Massachusetts Life Science Council Internship Challenge Program. This program helps to promote the advancement of small Massachusetts companies (less than 100 employees) in the life sciences fields as well as the education of students in the field of life sciences. Bach was one of about 100 life science companies who qualified for the internship program. Out of over 1,300 applicants, 209 students received internships, and two of them are here at Bach! Nick and Megan had a lot of competition and should be very proud. This is the first year that Bach Pharma has qualified for the Internship Challenge program, and we are excited to have our first interns for the summer!

Nicholas (Nick) Hammond **Merrimack College, North Andover, MA**

Nick is a senior biology major at Merrimack College. He is a resident of Medford, MA and is currently working on the protocols for GVT[®] pharmacokinetics studies.

"I am so excited to be working at Bach," says Nick, "At Merrimack I have taken several science courses, but at Bach I am learning a lot about how small businesses in life science work, and I am being exposed to a whole new learning environment that I haven't had direct experience with until now."



Nick Hammond

Megan Sperry **Boston University, Boston, MA**

The Bach Family

Farewell, Dr. Yan!

Mingshan Yan, MD, PhD, one of the dedicated researchers at the University of Texas, MD Anderson Cancer Center in Smithville, will be relocating from the U.S. to China at the end of August 2011. Dr. Yan has performed a tremendous amount of research on the role of reactive oxidative species (ROS) in human diseases, especially A-T. Dr. Yan has been working with GVT[®] for several years and his extensive research has been of great help to Bach Pharma. Once in China, Dr. Yan will be starting an A-T research center at the Zijing Hospital and working with university scientists. Dr. Mingshan says,

"Both Bach Pharma and The Longevity Foundation have supported me for many years and I appreciate it so much. This time I will make the decision to go back to China by the end of August.

In China I will run an A-T center in Wuhan, do some research with cancer, and handle some R&D ventures. I hope my upcoming work in China will be beneficial to A-T kids there and to scientific research on A-T and ATM. I will collaborate with Dr. Berry at Harvard on this topic. Importantly, I would like to continue work with GVT in China as long as the conditions are feasible and available there."

Bach wishes Dr. Mingshan Yan the best in his future endeavors in China and would like to thank him for his tireless work with A-T and GVT!

Megan is a senior Biomedical Engineering major at Boston University. She is from North Reading, MA and is currently working on the protocol for clinical trials concerning GVT® treatment for A-T in children.

"The projects I have begun work on at Bach have been really interesting and very applicable to what I hope to do in the future. It is a great opportunity to work with clinical trials and in-depth research—both areas I hope to be involved with as a doctor and researcher in my future career."



Megan Sperry

Both interns are in the life sciences fields and hope to gain valuable knowledge and experience through their internships with Bach Pharma. Hopefully, these two students will return to their final year of undergraduate school with new skills and a better understanding of the pharmaceutical industry. Bach plans on maintaining a lifelong relationship with Nick and Megan.

Required Reading

Flu, a Novel, by Norm Spencer

One of Bach's own directors, Dr. Norman Spencer, has recently written a novel, *Flu*, and has had it published with Lightening press! *Flu* is a story of a small group of people that band together for survival as a pandemic "bird flu" ravages the population of the world. *Flu* is a novel of education and preparation for when the real pandemic comes. We would like to congratulate Norm on the success of having his novel published and would like to compliment him on a job well done on this fantastic book!



Flu's Cover

The book may be ordered online.

www.amazon.com

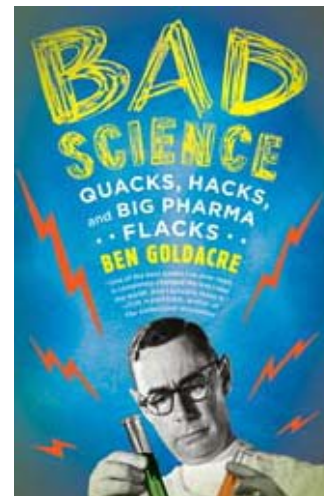
Publisher: Lightening Press

ISBN-10: 061544945x

ISBN-13: 978-0615449456

"Bad Science: Quacks, Hacks, and Big Pharma Flacks", by Ben Goldacre

Recommended reading by Dr. Peter Oates, this is a lively and funny paperback written by a British doctor who "bashes journalists, nutritionists, homeopaths, politicians, and pharmaceutical companies – his favorite targets" whose bad science resurfaced again during the recent controversies about the recantation of past publications regarding measles vaccinations linked to autism.



Bad Science

www.amazon.com

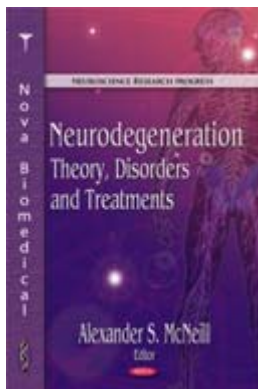
Original Publisher: Fourth Estate (hardcover)

ISBN: 978-0-86547-918-0 (paperback)

Neurodegeneration: Theory, Disorders and Treatments

“Chapter 1: Oxidative Stress-Mediated Neurodegeneration: A Tale of Two Models”,

Paul K. Y. Wong, Jessun Kim, Soo Jin Kim, Xianghong Kuang and William S. Lynn



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This book is the most recent publication from the Dr. Wong's research mentioned above.



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