

Appointment with Pohlman

Nice Genes

By Ralph Pohlman



For those of you who like to keep track of what is going on in the world, I try to update you on significant scientific stuff that may eventually affect your life, or maybe your grandchildren's lives.

A few years ago, around the beginning of the new millennium, a guy named Craig Venter, using computers, figured out the sequence of nucleotides that make up the human DNA. I predicted then that this heralded a new breakthrough and focus in medicine that would change everything and that he should get the Nobel Prize. Well, he did. And because of his work they have found the genetic sites of Parkinson's disease, Alzheimer's, diabetes, and lots of others.

That is just the beginning. Others will come. In fact, only recently a team of B.C.-based scientists decoded the genome of a patient's breast cancer. Future generations will look back on these past years as the dark ages of primitive medicine.

So, with that self-congratulatory introduction, let me again predict the future. It is called biotechnology. Little more than a hundred years have passed since a monk named Gregor Mendel demonstrated that the defining characteristics of a pea plant – its shape, size, and the colour of its seeds, for example – are transmitted from one generation to the next in ways that can be predicted and repeated. These findings were ignored for years. And Fr. Mendel didn't live to know he had founded the science of genetics or even know what a gene was.

I don't have the space to recount all the steps that took place over the intervening years; the genetics of blood groups, the discovery in the 50's of the double-spiral structure of DNA by Watson and Crick (Nobel Prizes for both) and on and on, so I will just jump to the present.

Clearly the industrial age is drawing to a close and will be replaced by an era of "biological engineering". It won't happen quickly, but it has already started. Let me give you an example.

Malaria infects around five hundred million of the world's poorest people and every year kills around a million, many of whom are children under five. For many years the usual

treatment was quinine and/or chloroquine. But lately the most virulent malaria parasite – Plasmodium falciparum – has grown resistant to the drug. The only consistent treatment is Artemisinin, now the world's most important malarial medicine.

Unfortunately it is very expensive, far beyond the reach of most poor African nations to treat huge numbers of the population. It is derived from a plant called Artemisia annua, or sweet wormwood, that grows wild. The plant has to be harvested and the artemisinic acid extracted and purified and all that costs money. It is not easy to cultivate, yields are low and production is expensive.

So now we come to Dr. Jay Keasling, a biochemistry professor at the University of California at Berkeley, who happened to be in the process of creating a new discipline, synthetic biology. This gets really complicated but let me just say it has to do with actually making synthetic DNA and constructing genes from scratch.

Do you get it? We will no longer have to depend on nature to supply us with the stuff we need. We can actually make new forms of life. As the editors of the journal Nature said in 2007, "For the first time, God has competition."

So Keating and his laboratory crew put together the genetic chemistry of a cell with a metabolic pathway that did not exist in nature, and that manufactures artemisinin. Actually, it manufactures amorphadiene, which is the precursor, but let's not get into that. They did it by inserting three specific genes into E. coli, one of the world's most common bacteria. This is seen as the first *bona fide* product of synthetic biology.

Dr. Keating's original goal was to design and produce artificial fuels that emit little or no greenhouse gases – one of President Obama's frequently-cited priorities. But then he got interested in the malaria problem. Artificial fuels are probably still on the list.

That, my friends, is the future. Sounds like science-fiction, doesn't it? Well, it once was, but not anymore.

NEW TO YOUR
COMMUNITY? CALL

Dianne
905-640-3521 or
Karen 905-640-1657



Our hostess will bring
gifts and greetings,
along with helpful
community
information.



Care & Share
THRIFT SHOP
Mennonite Central Committee

Hundreds
of "New to
You" items
every day!

2 DAY FINE JEWELLERY SALE

Fri. Nov. 13 ~ 5 - 8 pm • Sat. Nov. 14 ~ 9:30 am - 1 pm

- 10 and 14 Karat Gold • Silver
- Brooches • Rings • Watches

Hours: Mon. - Sat.
9:30 a.m. - 5 p.m.
Friday till 8:00 p.m.
No Drop Off on Sun. & Mon.



6240 Main St., Stouffville
Phone: 905-640-1410

GOOD EAT
CHINESE RESTAURANT



The Good Eat Difference - Fresh, Quality
Food Cooked the Healthy Way

For over 40 years the number to call for the best quality Chinese Food in Stouffville has been the same - 905-640-6565. That's the phone number of the Good Eat Chinese Restaurant. Raymond Luo, the current owner of this cosy Downtown Stouffville eatery, is maintaining the restaurant's long established tradition of excellence in Chinese Food. "We use only the best quality chicken breast, beef, pork and shrimp," says Raymond, who is trained in the art of Chinese cuisine. "We support local farms by buying fresh vegetables from them."

Raymond upgraded his Chinese Food preparation skills by taking fusion cooking training last year. Fusion cooking results in

the best tasting food by using fresh food and high quality vegetable oil to produce food that is healthier with less grease. "That means less cholesterol, and we use no MSG so our food is natural." The Good Eat Restaurant also specializes in catering to parties. The Stouffville Legion, Eastern Gate seniors group, and several area churches have all shown their confidence by having Raymond cater their events.

Good Eat Restaurant's manageress Surina Yiu says she is seeing more and more new faces in the restaurant as Stouffville continues to grow. "Stouffville is still a very friendly town to live and do business in," she says.

Raymond and Surina would like to express their gratitude to all their patrons who support the restaurant. "Thank you Stouffville for voting the Good Eat Chinese Restaurant the number one Chinese Food restaurant in Town."

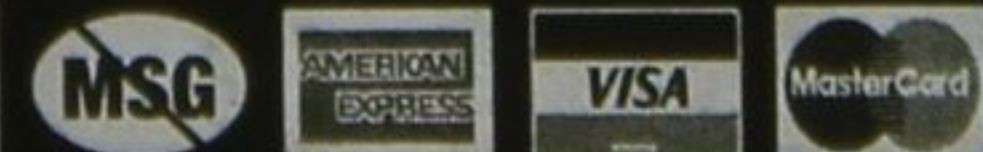
DINE IN OR TAKE OUT

FREE LOCAL DELIVERY ON ORDERS
OVER \$25 BEFORE TAX

10% DISCOUNT (13% FOR SENIORS)
ON PICK UP ORDERS OVER \$25
BEFORE TAX (CASH ONLY)

WE'LL BE GLAD TO ALTER THE
DEGREE OF SPICE FOR YOU

HOURS Tues to Thurs 3pm - 10pm
Friday 3pm - 11pm
Saturday 3pm - 11pm
Sunday 4pm - 9:30pm



LICENCED UNDER LLBO

6294 Main. St. 905-640-6565
(ACROSS FROM SCOTIABANK)

TURACK RAGUSEO LESTI GILLIATT LLP
CHARTERED ACCOUNTANTS



Supporting Downtown
Stouffville

Available For Evening And Weekend Appointments
6335 Main Street, Stouffville, Ontario L4A 1G5
905-640-1991 • email: info@turack.ca

HOME THEATRE - HIFI - HIGH DEFINITION TV - ACCESSORIES - CUSTOM INSTALLATIONS - PARTS - SERVICE

Made in Canada?? How about Made in Stouffville!

Celebrating 37 years as Canada's oldest loudspeaker manufacturer.



6316 Main Street Downtown Stouffville
www.studiolab.ca (905) 640-8886

StudioLAB