Nutrition Pioneer

Biography of T. Colin Campbell

John Fraim
With T. Colin Campbell

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The story is unquestionably about my entire career/life—as some of my colleagues have said. And even then, it is not about my career/life but even more so about the lives of those who went before me, for example, my father (a farmer with about two years of formal education) and before him his mother and before her, her father (my great-grandfather)

It also is about the evolution of a Western, more urban, more industrialized society. It seems that I have, without conscious planning beforehand, crossed a very big eddy in the stream of life. But far more important is the nature and flow of a Western society. I've been in a canoe that drifted across that eddy, at times barely able to keep the boat upright. And as I look back during these recent years, I am able to see this trip ever more clearly.

I have seen and experienced, acutely and first hand, from the bucolic days of the cow pastures to the elegant spires of establishment science and its strange bedfellows, the hard elbows of industrial competition.

T. Colin Campbell

Outline

Black Type = Dr. Campbell's life
Blue Type = Outside events related to Dr. Campbell's life
Red = Colin's responses from Biography Workbook

1862

The U.S. Department of Agriculture (USDA) created. It was expected to perform two functions. One was to ensure a sufficient and reliable food supply. The other was to "diffuse among the people of the United States useful information on subjects connected with agriculture in the most general and comprehensive sense of that word." The last was interpreted as a mandate to issue dietary advice.

1893

By the early 1890s, the USDA began to sponsor studies on the relationship between agriculture and human nutrition. It appointed W.O. Atwater as its first director of research activities. In early 1893, the odds that Wilbur Olin Atwater would get public support for his grand plan for food investigations were slim to none. In fact, the future of the Office of Experiment Stations, which he had worked so hard to establish, was in doubt. But as often happens to people of vision, an "angel" interceded—in the form of a close personal friend of the Secretary of Agriculture who knew and admired Atwater.

On May 23, the Secretary wrote: "Mr. Edward Atkinson of Boston suggests the expediency of establishing food laboratories."

With those simple words, the door was pried open for the first federal funding of human nutrition research in the United States. Although it took another year of intensive skirmishing and skillful diplomacy, Atwater's efforts paid off. In May 1894, the agricultural appropriations bill included $10,000 for food investigations.

Eat more protein and fewer carbohydrates. These familiar recommendations came from Wilbur Olin Atwater in the 1890s. Atwater conducted the first federally funded nutrition research in the United States. His seminal studies contributed to the growing awareness of the varying amount of energy in foods. Prior to Atwater, most Americans considered food to be food. It didn't matter what you ate, only how much.

Fat, protein, carbohydrates, calories—thanks to W.O. Atwater, these words entered the consciousness of Americans in the 1890s. Atwater's federally funded nutrition studies were the first of their kind in the U.S. Atwater quantified the energy values (calories) of different types of food. He also studied the amount energy expanded in different activities to determine the number of calories required to maintain a healthy body. His discoveries formed the basis of today's knowledge of nutrition.

"The evils of overeating may not be felt at once, but sooner or later they are sure to appear—perhaps in an excessive amount of fatty tissue, perhaps in general debility, perhaps in actual disease." W.O Atwater

1894

Knowledge of the nutrients and their functions was very limited. Carbohydrates and fat provided energy to maintain body temperature and do muscular work. Protein had the added duty of building and repairing tissues. Vitamins were unknown. And only a few major minerals, such as calcium and phosphorus, were recognized as somehow essential, but their role in the body was unclear.

Atwater's quest for a scientific understanding of nutrition was coupled with the social consciousness of the day. In a 1894 letter, he wrote: "The individual man is coming to realize that he is his brother's keeper, and that his brother is not only of his household but may live on the other side of the world. With all these thoughtful people the conviction is growing that there is one fundamental condition of the intellectual and moral elevation of the poor, the ignorant, the weak, the destitute, namely the improvement of their physical condition."

Atwater joined the thinkers of the day in the conviction ". . .that the intellectual and moral condition and progress of men and women is largely regulated by their plane of living; that the plane of their intellectual and moral life depends upon how they are housed and clothed and fed."

1896

In 1896, Atwater and Wesleyan graduate student A.P. Bryant published The Chemical Composition of American Food Materials, or simply, Bulletin No. 28. This bulletin would become the forerunner of USDA's Agriculture Handbook 8—the dietitian's bible. It listed the minimum, maximum, and average values of the known nutrients in all American foods analyzed by July 1895.

"Within 4 years, so many new analyses had appeared that a revised edition of the bulletin was issued," wrote Ross A. Gortner, Jr., who followed Atwater at Wesleyan University. "More than a third of all these analyses were performed by Atwater and his associates in the chemical laboratory at Wesleyan."

1906

A 1906 reprinting of the bulletin, with only minor changes, stood until June of 1940 when USDA Circular No. 549 was published. Gortner noted, "I'm sure that [Atwater] could not have anticipated that it would not be superseded until some 40 years later."

1909

The U.S. Department of Agriculture (USDA) began collecting information about the supply of basic food commodities.

1912

Milk pamphlet.

"Milk, The Best Food We Have. Give Your Children Milk." (See JPEG)

1916

Atwater's findings are translated for consumers in 1916, the food guide was born. The USDA hired practitioners of the fledgling field of home economics to write these guides and lead nutrition programs through the Cooperative Extension Service. Eschewing the "pinch of this, dab of that" tradition, home economists' scientific approach to cooking made it easier to quantify the nutritional values of their recipes.

1917

The USDA issued its first set of overall dietary recommendations as a 14-page pamphlet titled *How to Select Foods*. As Marion Nestle notes in *Food Politics*, "This document is remarkable for establishing precedents to which the agency still firmly adheres. It established a food-group format by organizing the food sources of nutrients then known to be needed for health into five categories: fruits and vegetables; meats and other protein-rich foods (including milk for children); cereals and other starchy foods; sweets; and fatty foods. It also established principles that continue to govern USDA policy on dietary advice. The pamphlet did not recommend any special foods or combination of foods. It tells very simply what the body needs to obtain from its food for building its

tissues, keeping it in good working order, and providing it with fuel or energy for its muscular work. It shows in general ways how the different food materials meet these needs and groups them according to their uses in the body. As we shall see later, this approach permits all foods to be recommended as part of healthful diets and precludes suggestions to restrict foods in one or another category."

As Nestle observes, the USDA ignored Atwater's advice to limit intake of fat and sugar and its publications emphasized the newly discovered "micronutrients," the vitamins and minerals that are essential for life but are needed only in small amounts. "Food manufacturers and agricultural producers readily supported this emphasis because they grasped its marketing potential. They knew that the market for their products was limited. Food already was abundant in the United States and already supplied more than enough calories for the population. Food producers could exploit the discoveries of vitamins and minerals to promote their products as vital for health and longevity. Because all food and animals and plants contain vitamins and minerals, all could be promoted on this basis."

1923

A publication of the USDA noted "The number of different food materials available in most parts of the United States is very great and is constantly increasing as a result of improved methods of agriculture … There is no one of all these many foods that cannot be introduced into the diet in such a way as to contribute to its wholesomeness or its attractiveness."

1934

Colin Campbell born in Annandale, New Jersey to Thomas McIlwain Campbell
And Bessie Hoagland

Our diet has changed dramatically since the 1930's, when we first started to change from natural farming processes, developed over 1000's of years, to scientific farming processes. These changes have run in parallel with lifestyle changes, disease pattern changes and food processing changes.

30s. William Rose discovered the essential amino acids, the building blocks of protein.

I went to a rural elementary school (actually three different ones) during my first 7 years. One was a very small 2-room school (fourth school) where many of the students, from very poor families in the nearby mountains, went barefoot until about Dec. My teacher was said to be a prostitute by night—she was the teacher who whipped misbehaving boys, usually with a switch from a tree. We had the usual outside toilet, and spent time cleaning the grounds around the school. When I 'graduated' from the seventh grade, there were seven students.

1936

Colin Campbell recalls his earliest memory. “Being taken to the cow barn during milking time and put in the big ‘feed box’, with my brother, Jack, to play in the feed while my Dad and Mom milked the cows. Once, I somehow got out of the feed box only to start walking to where he was when a cow with horns came crashing down on me (she had had a calf and was being driven around the end of the stanchions by my dad to her milking place when she saw me and ran for me. She was about to gore me with her horn when my dad rescued me by hitting the cow with big push broom, only to knock off one of her horns—very frightening experience that I still remember to this day. This may have been when I was about 2-3 years of age.”

Other early memories. “Coming downstairs on Christmas morning to see what Santa Claus had brought and finding two very young goats standing under the Christmas tree (a nanny goat for my brother Jack, and a Billy goat for me).”

Other early memories.

Walking to school (about a mile) down a narrow dirt road to meet the school bus

Having our weekly bath in a big tin tub in the kitchen, the same tub also used to clean a little pet pig. Later, we learned that the pork that we suddenly had for dinner one evening was our pet pig.

Picking water cress near a spring in the Springtime for some greens

My Mom grabbing and holding me in the air so that a mad dog would not bite me. Instead it bit her, which then required 14 days of Rabies shots.

Going into the weekly delivery ‘ fish truck’ with my Mom for her to buy some fish.

With my brother Jack, we had the job of stomping down the loose hay that was being pitched-forked up on the horse-drawn wagon by my father and his father (my grandfather.

My Uncle (my father’s brother Jack) and his wife (Ethel) lived with us when I was about 4-5 years of age. She had incurred cancer and each day my Uncle would travel to the hospital to visit her. He often took along my brother, Jack, and me. I knew enough to know that cancer was a very bad disease, especially when she died and, remembering reacting to say that ‘when I grew up, I would find a cure for cancer’, not knowing either the disease or what the concept of “cure” really meant. Eventually, though, it meant to me the idea that everyone else thought as well—develop a drug to kill the cancer.

* * *

The U.S. Department of Agriculture (USDA) began collecting information about household food consumption.

1939

Colin Campbell begins school by walking about a mile down a narrow road to meet the school bus.

My life was very much centered around my Dad and the work that had to be done. From about 5-6 years of age or so, my brother and I worked long hours in the field, oftentimes alone in the field out of sight but always within 15-20 minutes away. My earliest jobs then were all on the farm, including the driving of a self-propelled combine for harvesting grain for other farmers, so as to earn money to go to college.

My father was the most influential person to me when I was a child. I was the oldest of four children (3 boys, 1 girl) and my father took a great interest in my school-work from a very young age. I recall sitting on his lap when he was teaching me how to spell, the first word being "Esso" that we often could see along the roadside.

This interest continued on many levels throughout my young years. My father only had about two years of formal education and was deeply committed to my getting an education. Those two years for him occurred in Northern Ireland where he was born. He also, of course, was deeply interested in my brother's and my sister's education as well.

Being given the opportunity (about age 5) to milk a cow that then over many years led to my milking cows on a fairly regular basis. That cow was named "New Brunswick" after the town where my father had bought it. About 3-4 years ago, I returned to that town for the first time after 70 years to give a lecture to the New Jersey College of Medicine.

1940s

Grows up on a dairy farm milking cows. "I was not especially aware of anything nutritional except that the milk that we were producing was the most perfect food. Indeed milk was priced in the marketplace at that time according to its fat content, the higher the better. But nutritionally speaking, the main value of milk was said to be its protein content and protein quality." Campbell on T. Colin Campbell Foundation website.

In elementary school my best friend was Scotty who was not especially good in class (we were in the same class, he being one year older) but he really liked the out-of-doors, especially hunting, fishing. His wherewithal was a very simple, uncluttered life. I

remember well when in the 1950s, there was some discussion of a new idea about chemicals called pesticides. Scotty and I talked about it and Scotty was of the opinion that trying to kill one kind of bug made no sense because this is not the way things work in Nature. Every person, animal and insect had a purpose.

The water-soluble B and C vitamins were identified.

Russell Marker perfected a method of synthesizing the female hormone progesterone from a component of wild yams called diosgenin.

Editorial Note

The Journal of Nutrition is pleased to grant the request of the Food and Nutrition Board of the National Research Council to print from time to time official statements deemed important and of significant interest to professional workers in the field of nutrition. This is the first article to be published in accordance with such a plan.

During the 1930's certain nutritional deficiencies were prevalent in the population of the United States and newly developed synthetic vitamins were being used in foods with little or no scientific guidance. In 1939 and again in 1945,
the Council on Foods and Nutrition of the American Medical Association adopted policies on the proper addition of vitamins and minerals to foods. See Annual Meeting of the Council on Foods, 1939, J.A.M.A. 113: 681 (Aug. 19). Also, Policies of the Council with Respect to the Nutritive Quality of Foods, 1945, ibid., 129: 348-349 (Sept. 29).

In 1941 the Food and Nutrition Board (originally the Committee on Foods and Nutrition) of the National Research Council likewise adopted a policy on the addition of specific nutrients to foods. These statements of policy have now been reconsidered jointly by the Food and Nutrition Board and the Council on Foods and Nutrition in the light of experience and of new developments. There is good evidence to indicate that the policies have been beneficial to the public and have encouraged sound nutritional practices. The policies are therefore reaffirmed in principle and, with revision of wording, are embodied in the following statements:

1. With carefully defined limitations, the principle of the addition of specific nutrients to certain staple foods is endorsed for the purpose of maintaining good nutrition as well as for correcting deficiencies in the diets of the general population or of significant segments of the population. The requirements for endorsement of the addition of i particular nutrient to a particular food include (a) clear indications of probable advantage from increased intake of the nutrient (b) assurance that the food item concerned will be an effective vehicle of distribution for the nutrient t) be added, and (c) evidence that such addition would not be prejudicial to the achievement of a diet good in other respects.

These requirements have been met in the specific case indicated in paragraph 6 below.

2. The desirability of meeting the nutritional needs of the people by the use of natural foods as far as practicable is emphasized, and to that end education in the proper choice and preparation of foods and the betterment of food production, processing, storage, and distribution so as to provide more fully the essential nutrients native thereto are to be encouraged.

3. In order to avoid undue artificiality of fold supply, foods chosen as vehicles for the distribution of additional nutrients should be, whenever practicable, those foods which have suffered loss in refining or other processing, and the nutrients added to such foods should preferably be the kinds and quantities native to the class of foods involved.

4. The addition of other than natural levels 01 nutrients to foods which are suitable vehicles of distribution may be favored when properly qualified judgment indicates that the addition will be advantageous to the public health and when other methods for effecting the desired purpose appear to be less feasible.

5. Whenever technological and economic developments lead to extensive reduction in the consumption of a staple food, with a consequent nutritionally significant reduction in the intake of an essential nutrient or nutrients, consideration by qualified bodies should be given to the desirability of restoring such nutrient or nutrients to the dietary.

Journal of Nutrition

1942

Marion Nestle notes in *Food Politics*, "During WWII, the rationing of meat, sugar, butter and canned goods inspired various federal agencies to develop food guides based on pragmatic considerations of food availability as well as theoretical considerations of nutrient standards. The result was a bewildering array of food groupings issued by various agencies. In 1942, federal pamphlets instructed Americans to 'do your part in the national nutrition program' by eating foods from eight groups every day; four of these groups were milk, meat, eggs, and butter – all sources of fat and cholesterol as well as of essential vitamins and minerals."

1943

He started me out very early working with him in the fields on the farm, milking cows, driving a team of horses (starting about age 8-9?) first to pull a hay wagon, then to harrow, rake hay, mow hay, etc. I was proud of the fact that I could drive a horse-pulled side-delivery hay rake through a 10-foot gate pulling I sat on the seat above spinning rake when raking hay. This required a very deft ability because the rake was wider than 10 feet and I had to carefully get the team to carefully pull the rake in one direction then in a slightly different direction so as to ease the machine through the gate.

We had a very active social life around our small town, Waterford VA, an historic town settled in 1732, where they still celebrate every fall the arts and craft show that was started by my parents and some others in 1943. In those early years, we children did square dances as part of the show for the city folk who came to visit, while my mother and friends made meals and homemade pies.

* * *

The USDA issued the National Wartime Nutrition Guide noting "U.S. needs us strong: eat the Basic 7 every day." This guide combined meat, eggs, fish, and beans into one group, kept milk as a separate category, and retained fats and sugars as separate groups. As Marion Nestle notes in *Food Politics*, "The changing number of food groups reveals lack of coordination not only among agencies but also within the same agency." For example, the USDA published the Basic 7 but also told wartime homemakers how to plan low and moderate cost meals based on foods from 11 groups.

1945

When I was about 10-11, more tractor-pulled machines were beginning to replace horse-drawn equipment. One such machine was a hay baler with moving parts to press the hay into a bale (a big banging noise) that was then tied. On one occasion, I came very close to being killed when I was driving my horse-driven side-delivery rake near the baler in the field. The horses became spooked and took off uncontrollably running in a gallop. Imagine my sitting on a small metal seat atop the spinning rake with the horses galloping and raking hay into the air above my head. I could only try and steer them toward a high fence across a fairly wide field while sitting on this small seat trying to hold on and simultaneously steering the team. The men in the field were running behind unable to catch the horses. Eventually they stopped at the fence but, had I fallen off into the rake I would have been killed. (Young boys being killed on farms in those days was not uncommon!)

* * *

During 1945-46, my father was one of two farmers in the U.S. who had been contracted by the Squibb pharmaceutical company in Philadephia to collect the urine of pregnant mares in order to extract female hormones, so it was said. In later years, I learned that this probably was follicle-stimulating hormone (FSH) that was used to help women maintain pregnancy.

For my father, it was a lucrative business while it lasted (about one and a half years) but was replaced by the discovery of a similar chemical in clover plants grown in Australia so we were told. The money enabled us to travel from our farm in Virginia to Niagara Falls, then across NY State to Vermont where my father had lived during his early teen-age years. Because the mares had to be pregnant, he bred them to a 'thoroughbred' stallion that sired racehorses. The foals were considered to be 'half-breeds', which were highly desired by the 'hunt club' people in the county where we lived. Still today, fox hunting by horseback is still a very substantial part of that county in Virginia—still today, the national Gold Cup show and races are held in that county.

Having a supply of half breeds meant that I had my own horse, "Smoky". We were invited to ride with the hunt club people but that was impossible because we had neither money nor time to do that. But I did ride quite a lot, trying to get Smoky to jump and other thing, one occasion of which nearly cost me my life—again.

We had gone to Washington to see a 'rodeo show' that highlighted Roy Rogers and his horse Trigger. I saw how Rogers got Trigger, Rogers in the saddle, to stand on his rear legs, a rather famous picture shown widely for years. I thought I wanted Smoky to do the same thing. To make it work, I stupidly rode her at top speed to a high fencerow that she could not jump. I then pulled back on the reins to see if I could get her to rear up. Unfortunately, the saddle girth broke and I went flying through the air, only to end up unconscious. I still can't remember the actual event but do remember lying in the alfalfa field hearing my father and his brother hollering and looking for me—it was milk time and I had not come to the barn. But, although I could hear, there was no possibility for me to answer and I was in a world that was perfect, one where there was no pain, no worries and only a white light that suffused everything around me. From that point onwards, I lost total consciousness that I did not regain until about 24 hours later in a hospital bed where my parents were anxious to know if I was ever going to 'come around'.

1946

When our cowherd had grown to about 12-15 animals (then 15-20 or so a little later) my Dad put me in charge of the milking for some of those years—when I was about 12-18 before going to college. This also was at a time when my Dad had purchased milking machines. But these machines did not completely get all the milk thus requiring us to milk by hand the last bit of milk ('stripping').

Being in charge meant my weighing and keeping track of the amount of milk for each cow. This was important because it meant breeding them with a bull with a good pedigree of milk production and higher milk fat content.

Baseball was my favorite sport because my uncle, who had the resources, got tickets for us to go on several occasions to see the Washington Senators play, first in 1946 then until about 1956. (I am still a devoted Washington baseball fan (now called the Nationals), even though they have been perennial losers until the last year or so.

My most influential teacher was my sixth and seventh grade teacher in the Waterford, VA elementary, Ms. Orrison. She always seemed to praise me a great deal, saying that I was destined to do "big" things, as she said. In high school it was my Latin and mathematics teachers who often praised my work, although at times I thought it was more of a novelty thing to say because we were so different, coming so far to school from the farm. I think, however, that my really favorite was our social studies teacher, who had us debating issues like the U.S. Declaration of Independence, the U.S. Constitution and the Communist Manifesto. She had shortly before my time taught the famous Washington Post cartoonist, Herb Block, whose political cartoons often became the topic for discussion. She was a terrific teacher.

* * *

After WWII, the USDA publications continued their inconsistencies on nutrition advice. A peacetime version of the Basic 7 guide was issued. "This is the Basic 7 guide for well-balanced meals. In time of emergency, you need to eat less of the scarce foods, more of the plentiful. Food is needed to feed the hungry – don't waste it."

A few months after the above was issued, the USDA issued *Food for Growth: Food for Freedom*, targeted to children in the fourth through sixth grades. As Marion Nestle notes, this publication was the first to recommend selections from just four food groups – milk; vegetables and fruits; eggs, meat, poultry, or fish (sometimes dried beans or peas); and a fourth category that included bread, cereal, cookies, and cakes. These guides actively promoted consumption of fats and sweets, even to children and together they continued to promote the "eat more" agenda.

1947

During my teen years, I hunted (mostly squirrels), fished and trapped fur-bearing animals (pelts sold to Sears, Roebuck by mail) in any spare time I had.

Because of my Dad's deep commitment to our education, I drove for 5 years 100 miles per day (50 miles each way) to attend junior and senior high school in Washington DC. Although a public school in Georgetown, DC, it was voted the #1 public high school in the U.S. (my next-in-line brother and younger sister went to these schools for three years). I could not play sports because I had work to do on the farm when I returned home. I also, at most, spent about five hours on my school work at home for my five

years of high school education. I usually did my homework in classes immediately after finishing the preceding class. I graduated #22 of 144 students, being class president one year in junior high school, and the equivalent of salutatorian in the graduating class.

In high school in Washington there was a reference to me being "Farm Boy." I seemed to have become somewhat of a novelty in high school because I was the only one from a real farm, not really one of 'them'. But, still, I felt very much welcome both by the teachers and students.

In high school, I could not have really close friends because they all lived so far away and I did not do any of the after-school social things to get to know them better. However, I did have two 'better' friends, Phil Weinert and Dan Burton, whose fathers were 'high up' in the military. One was a general in the army, the other an admiral in the navy. Phil and Dan would come out to the farm on a few occasions to go hunting, once to go camping on the nearby Appalachian trail in the 'dead' of winter.

I became a fan of the Washington Redskins, first started when, as President of my eighth grade class in Washington, I had the opportunity of meeting two famous Redskins, quarterback Sammy Baugh and lineman Andy Farkas.

I would have loved to have played sports but this was impossible, given our long trip to school and our work at home. I had tried out for the high school football team and made the team but then the practices came too early in the morning that I could not make.

1949

When I was about 15 or so, my father was invited to join the so-called Planter's Club in our county, comprised of some of the better-known and better endowed farmers. He considered it quite an honor and was asked to take the meeting notes, Not wanting to tell them he had very little education and minimal capability for writing, he had me to write up his memories and brief notes into a report for the next meeting.

1950s

The roles of essential nutrients as part of the bodily process were brought to light. More became known about the role of vitamins and minerals as components of enzymes and hormones that work within the body.

1951

A trip, by car was made in 1951 when we drove to the West, especially to rural Montana where my mother's aunt was running a 2000+ acre ranch with her son.

1952

Being that I was the first to go to college on either side of my family, the process of applying for college was quite foreign both to my Dad and to me. We did not know, for example, that scholarships might be a possibility and never inquired about them. My father and I visited a retired Captain who was a graduate of Cornell who interviewed me and wrote a letter of recommendation. I took the required entrance exam, doing well in math but poorly in English. I therefore was turned down by Cornell where I where I wanted to study 'law'—whatever that meant—with a letter explaining that my vocabulary was much too low.

I was, however, admitted to my second choice, Penn State, to study agriculture. All incoming freshman students were given a test to help guide them in their choice of a field of study and I scored high in agriculture (A) and, surprising to me, medicine (A). My interest in law was disappointingly scored as C. Psychologically, I was not prepared to consider Pre-Med to become a doctor but nonetheless found it intriguing. That said, therefore, I chose Pre-Veterinary Medicine, which combined the two disciplines.

Since my freshman year at Penn State, I have been an avid golfer as well, albeit not that good anymore. I also like running (until about 3 years ago, having run everyday for about eight years 4-5 miles a day, even more for a while. (I still run 3-4 miles when I have time.)

At Penn State, my most influential mentor was my Advisor, who I later learned, contacted Professor Clive McCay to tell him to try and get me to leave Vet School and come to Cornell.

My most memorable college moments were Penn State football. The legendary coach, Joe Paterno, before he became coach, was my PE instructor. (I am one who believes that the harsh treatment that he received at the end of his career was most unfortunate and mean-spirited!)

1953

Some activities in college were the Young Republican Party, watching the AP machine in the campus press room with my friend, Myron Feinsilber who later became a reporter for the Washington Post, President of the Pre-Vet Club, advanced ROTC and being a member of the Pershing Rifles drill team

1955

After three years at Penn State, it was suggested that I might try applying for Veterinary School, even though I had only done three rather than the four years of undergraduate studies. I applied to the University of Pennsylvania (one of the top two such schools in the U.S., the other being Cornell) and to the relatively new University of Georgia Veterinary School, which was established four years before to serve the southeastern states, Virginia included.

At the University of Georgia Veterinary School, my mentor was Professor Bob McRory (later the VP for Research) who taught the biochemistry class and who advised me to accept the offer to leave vet school in favor of graduate studies in the basic sciences (I was #1 in his class by a considerable margin).

1956

Colin Campbell gets a BS degree Penn State in pre-veterinary science.

I was admitted to both but chose Georgia because my tuition would be subsidized by Virginia—Penn was much too expensive. My first year at Georgia went well (ranked #4 of about 52 students) but toward the end, I received a telegram from a famous professor at Cornell who wanted to have me go to Cornell while receiving an assistantship (the account told elsewhere). My first year at Georgia also was credited back to Penn State for my Bachelor's of Science degree in 1956.

1957

In effect, I was being recruited to Cornell for graduate studies, after having been turned down for undergraduate studies, an event that did not go unnoticed, either for me or for my Dad. I obtained from Cornell my Masters (awarded 1957) and, later (as told elsewhere), my PhD (awarded 1962 but finished in Fall 1961) from Cornell, both with a major in animal nutrition with minors in biochemistry (MS and PhD) and microbiology (PhD only).

MS Nutrition and biochemistry Cornell. "Undertook graduate studies in animal nutrition doing experimental research on the ability of gut, microorganism to adopt the digestion of dietary fiber. This information demonstrated, to some extent, the concept of dietary adaptation that was, for me, a concept that later proved to be especially important. The adaptation in this case was attributed to a change in the gut microflora." Campbell on T. Colin Campbell Foundation website.

Scientist at Hazelton Laboratories. “Technician in a commercial laboratory, testing chemicals and irradiated foods for cancer-producing capability in experimental animals. This type of testing was the beginning of a long-standing program, still in existence even today, supported by government regulations to test for the ability of chemicals intentionally or unintentionally added to food to cause cancer in laboratory animals. It was triggered by a 1957 congressional amendment to the Food and Drug Regulations called the Delaney Amendment. This grew out of a political storm that arose from the finding that a chemical herbicide added to cranberry plants could cause cancer. It became a very big political issue, in part because this finding occurred somewhat before the Thanksgiving Holiday, thus causing serious harm to the cranberry farming business. Such chemicals took the name ‘chemical carcinogen’. The infosequent congressional amendment stated that no amount of a chemical shown to be carcinogenic in experimental animals was allowed in foods destined for human consumption, that is, it was interpreted as zero tolerance. The laboratory that I had joined was carrying out these studies for companies who had to make this determination.” Campbell on T. Colin Campbell Foundation website.

The famous novelist Nabokov was teaching at Cornell when Campbell came there.

1958

Scientist at Hazelton Laboratories

The USDA creates a *Basic Four* food guide establishing the minimum level of daily servings to prevent nutritional deficiencies. In creating the guide, the USDA invited leading nutrition authorities in government, research, the food industry, and agricultural commodity groups to review preliminary drafts because it “felt that food industry groups would have a vital interest in any food guide sponsored by the government.” Indeed they did, notes Marion Nestle in *Food Politics* noting that dairy producers were pleased with the treatment given to milk and milk products by placing this group first. On the other hand, meat industry groups were said to be “unhappy about the serving size indicated for meat” pointing out that the size proposed was smaller than average. The proposed serving size included two daily portions of 2-3 ounces of cooked meat.

As Marion Nestle observed in *Food Politics*, “Remarkably, the USDA used versions of the Basic Four for the next 22 years, although it continued to based family mean and cost plans on 11 food groups. Except for the concern about portion size (an early warning of battles yet to come) food producer groups supported the USDA’s efforts to promote consumption of more and more varied foods.”

1959

From 1959-1961, Campbell was completing graduate studies at Cornell for a PhD degree in animal nutrition (with minors in biochemistry and microbiology) doing experimental research on utilization by ruminants of a nitrogen waste product to produce animal-based protein. “I was testing for the ability of a non-protein nitrogen waste product, biuret, to be utilized by the microflora in the rumens of ruminants (cattle, sheep) to produce their own microbial protein that then could be digested and absorbed by the animal. In this way, biuret could be a new and cheap source of producing animal based proteins. Like my earlier study, ruminal bacteria were able to adapt to this never before seen compound and actually find a way to create an organism to utilize it. What a demonstration of nature! Although other laboratories infosequently used our research findings and continued to pursue the possibility of using this compound, I am not aware that it was ever successfully marketed. I should also mention that for 5 semesters during my graduate program I was a teaching assistant and on 3 of those occasions, had to teach students in the feeding of farm animals. Throughout, my enthusiasm for producing animal based protein only became more infostantial like my professors.” Campbell on T. Colin Campbell Foundation website.

The book *Eat Well and Stay Well* by the physician researcher Ancel Keys and his wife is published. It is a lone island in the sea of conflicting information on nutrition exposed from the USDA. Their healthy heart cookbook suggested the now-classic dietary principles such as restricting saturated fats, preferring vegetable oils to solid fats and favoring fresh vegetables.

1960

First published manuscript. Campbell, T.C., Warner, R. G. and Loosli, J.K. Urea and biure for ruminants. Proc., Cornell Nutr. Conf., p. 96. 1960.

1961

Senior Chemist, Woodward Research Corporation, Herndon, Virginia

From 1961-1963, he was director of a commercial program in microbiology and radioisotope technologies, while testing, for the marketplace, chemicals for safety, using FDA guidelines. This was a spin-off toxicology testing laboratory of the earlier company, again testing for the possibility of commercial chemicals (herbicides, pesticides, medicinals, etc.) causing cancer in experimental animals. “While there, I collaborated with the FDA to develop a biological testing procedure (bioassay) to evaluate a very toxic chemical found in the feed of poultry thought to be present in human food as well. It was called the ‘chick endema factor.’ The FDA official was then offered a position at MIT to develop a new toxicology program that could lead to a new department. He offered me a position to come with him to set up and run the laboratory.” Campbell on T. Colin Campbell Foundation website.

1962

PhD dissertation in nutrition, biochemistry and bacteriology Cornell

Senior Chemist, Woodward Research Corporation, Herndon, Virginia

1963

Senior Chemist, Woodward Research Corporation, Herndon, Virginia

Research Associate MIT

1963-1965 Campbell continued investigating the so-called “chick endema factor” and isolated a material that clearly gave the impression that it was the most toxic chemical ever discovered but later identified by government scientists as dioxin. Other colleagues at FDA also continued to work on this same project, leading to the death of the one investigator who worked most closely with the material. Eventually, this “dioxin” was shown by others to be a contaminant of a defoliant being used in Vietnam called “Agent Orange.” Campbell on T. Colin Campbell Foundation website.

(Article Campbell & Friedman)

1964

Research Associate MIT

1965

Research Associate MIT

Assistant Professor of Biochemistry and Nutrition, VPI & SU, Blacksburg, VA

1965-1975. Assistant Professor to full Professor at Virginia Tech, Department of Biochemistry and Nutrition. Lecturer in biochemistry and toxicology. Coordinator of the US State Department project in the Phillippines to develop nationwide network of feeding centers for malnourished children, especially to insure adequate protein consumption. Set up laboratory to investigate effect of aflatoxin, a mold toxin found in peanuts and chemical carcinogen (for rats), as a cause of primary liver cancer in humans. “I observed, anecdotally, that children most susceptible to primary liver cancer surprisingly consumed the most protein similar to consumption levels in U.S. (later, after discovery of hepatitis B virus by other researchers, this effect also was undoubtedly

related to their chronic infection with hepatitis B virus). This observation in children corresponded with results of experimental animal (rats) studies in India showing that diets containing 20% protein (somewhat similar to human consumption in U.S.) compared with 5% protein (cow's milk protein) dramatically increased aflatoxin-initiated liever cancer. Many experimental rodent studies infosequently were undertaken to confirm effect of this protein on this cancer and to investigate by what mechanism this effect is expressed. Early studies showed that 20% dietary protein feeding infostantially increased the metabolic activation of aflatoxin (in the liver) to form a highly reactive metabolite that chemically binds to DNA (the main component of genes), thus increasing the genetic potential for cancer initiation and growth. Multiple other explanatory mechanisms also contributed to this effect, suggesting that a cancer effect (or any other disease-producing effect?) is not attributed to a single mechanism." Campbell on T. Colin Campbell Foundation website.

Among the largest influences on my career was Professor Charles Engel, head of the department of nutrition and biochemistry at Virginia Tech. He offered me my professorship in 1965, then became Asst Dean of the College of Agriculture and ran the nationwide program (under contract to the US Agency of International Development—State Department) on malnourished children in the Philippines. He was a man with vision and compassion.

The U.S. Department of Agriculture (USDA) began collecting information about food consumption for individuals.

1966

Assistant Professor of Biochemistry and Nutrition, VPI & SU, Blacksburg, VA

First presentation. Campbell, T.C. Mycotoxins in the Food Chain, Virginia Academy of Science, Harrisonburg, Va., May 5, 1966.

1967

Assistant Professor of Biochemistry and Nutrition, VPI & SU, Blacksburg, VA

Support for the "eat more" agenda of the USDA came from a new direction. A report of an investigation of hunger and malnutrition among low-income groups in the United States became the subject of a CBS television documentary called Hunger in America. Marion Nestle notes in Food Politics that at the time the idea that people were going hungry in the and of plenty seemed so shocking that the program elicited widespread demands for expansion of federal food assistance programs.

1968

Assistant Professor of Biochemistry and Nutrition, VPI & SU, Blacksburg, VA

University Coordinator of Philippine Programs, VPI & SU, Blacksburg, VA

In July, the Senate responded to the public outcry started by the 1967 CBS program Hunger in America by appointing George McGovern to chair a Select Committee on Nutrition and Human Needs that would lead "the war against hunger among the nation's young, old and poor." For the next nine years, McGovern's committee created laws to expand food assistance for families, children and the elderly through programs such as Food Stamps that still constitute the basis of the nation's "safety net" for the poor. As Marion Nestle notes in *Food Politics*, "Both the public and Congress strongly encouraged these 'eat more' activities, giving the McGovern committee license to meddle in other areas of nutrition and health."

* * *

Linus Pauling, a Nobel Prize winner in chemistry, created the term Orthomolecular Nutrition. Orthomolecular is, literally, "pertaining to the right molecule." Pauling proposed that by giving the body the right molecules in the right concentration (optimum nutrition), nutrients could be used by people to achieve better health and prolong life. Studies in the 1970's and 1980's conducted by Pauling and colleagues suggested that very large doses of vitamin C given intravenously could be helpful in increasing the survival time and improving the quality of life of terminal cancer patients.

1969

Assistant Professor of Biochemistry and Nutrition, VPI & SU, Blacksburg, VA

University Coordinator of Philippine Programs, VPI & SU, Blacksburg, VA

As Marion Nestle notes in *Food Politics*, "The ironic result of the McGovern committee's subsequent meddling was a sharp transition in federal dietary advice from 'eat more' to 'eat less' and from dietary advice as a relatively uncontroversial government activity to one that brought on outraged protest. By telling the public about dietary risks for chronic disease, the committee alarmed producers of foods that might be targeted as 'bad.' "

One of the first actions of the McGovern committee, it helped organize the 1969 White House Conference on Food, Nutrition and Health. As Nestle notes in Food Politics, participants not only discussed nutritional deficiencies in the United States, but also the "health problems of adults in an affluent society – the degenerative diseases of middle

age" caused by "overconsumption of calories with food choices that are not necessarily the wisest on the basis of available nutritional information." Among the hundreds of conference recommendations were suggestions to eat less of the "unwise" food choices – those containing too many calories and too much fat, cholesterol, salt, sugar and alcohol.

As Marion Nestle notes in Food Politics, the "affluent society" panel at the conference and staff of the McGovern committee were well aware of the emerging research that linked high levels of the above factors in diets to risks of chronic disease. Much of this research had been done by cardiologists who were appalled by the apparent epidemic of coronary heart disease among Americans that followed WWII. They could not help but be impressed by the contrasting absence of this disease among populations consuming largely plant-based diets.

With this in mind, the McGovern committee urged the NIH to support research on the ways in which dietary changes might prevent coronary heart and other chronic diseases. Committee members considered it odd that so little attention had been paid to the role of diet in health. As Nestle notes, "They viewed the classic problems of under-nutrition as a 'problem for a small but significant part of the population.' As they explained, 'malnutrition had two faces … overconsumption was a major health concern for at least 30 million Americans."

1970

Associate Professor of Biochemistry and Nutrition, VPI & SU, Blacksburg, VA

University Coordinator of Philippine Programs, VPI & SU, Blacksburg, VA

1971

Associate Professor of Biochemistry and Nutrition, VPI & SU, Blacksburg, VA

University Coordinator of Philippine Programs, VPI & SU, Blacksburg, VA

1972

Associate Professor of Biochemistry and Nutrition, VPI & SU, Blacksburg, VA

1973

Associate Professor of Biochemistry and Nutrition, VPI & SU, Blacksburg, VA

University Coordinator of Philippine Programs, VPI & SU, Blacksburg, VA

To focus national attention on the overconsumption aspects of malnutrition, the McGovern committee holds hearings on how diet affects obesity, diabetes and heart disease.

1974

Professor of Biochemistry and Nutrition, VPI & SU, Blacksburg, VA

1975

Professor of Biochemistry and Nutrition, VPI & SU, Blacksburg, VA

Professor of Nutritional Biochemistry, Cornell University, Ithaca, NY

1975-2001. Accepted a full professorship at Cornell University where experimental laboratory work continued until about 1997. Made several observations that helpd to establish nutrition principles showing 1) that experimental cancer development could be turned on and off, both early and late cancer development, by modest changes in nutrient intake 2) that by appropriate nutritional means, early initiated cancer could be kept dormant for much of a lifetime, then recalled to growth later in life 3) that promotion of cancer was only for animal-based casein not for plant-based wheat and soy proteins and 4) that the usual dose-response observed for chemical carcinogens high dose, high response was completely obliterated by low protein feeding among other findings." Campbell on T. Colin Campbell Foundation website.

A staff report on diet and chronic disease issued from the McGovern Committee from hearings held in 1973.

1976

Professor of Nutritional Biochemistry, Cornell University, Ithaca, NY

1976-1977. U.S. Senate Select Committee on Nutrition (chaired by Senator George McGovern) recommended decreased consumption of red meat and increased consumption of vegetables, fruits and whole grain cereals in order to decrease risk of heart disease. This activity of the McGovern Committee proved to be enormously troubling for politicians because it brought into question the main staple of the American diet, meat. McGovern later told Campbell that he took more pride in this work that anything he had ever done, even if it caused him and some of his colleagues in the Midwestern states their political careers. As Campbell recalls, "This was one of my first deeply troubling experiences with the politics of science. The Senate committee report was based on emerging evidence in the scientific literature and focused on the effect of

diet on heart disease. It was then that some of McGovern's colleagues wondered whether these same recommendations to prevent heart disease was consistent with the prevention of cancer. In order to answer that question, the Director of the National Cancer Institute (NIH) was invited to give his views to a congressional hearing, testimony that I and other colleagues were first invited to review. It was then that I first learned that only 2-4% of the total budget was assigned to dietary and nutritional effects on cancer causation while it was also acknowledged by the same organization that 35% of total cancers were attributed to diet and nutrition. I wondered how this organization – the leading cancer research agency in the world – agree that one-third of all cancers could be prevented by diet (I believed it was much higher) while simultaneously saying that we did not really know how diet works, yet then spend only 2-4% of its research budget trying to answer this question? A smell of obfuscation?" Campbell on T. Colin Campbell Foundation website.

The McGovern committee initiated a new series of hearings with the riveting title "Diet Related to Killer Diseases." At the beginning of the hearings, more than 30 witnesses described how eating too much of the wrong kinds of food would increase risks for cancer, cardiovascular disease and obesity. The "eat less" recommendations were becoming ingrained in American culture.

1977

Professor of Nutritional Biochemistry, Cornell University, Ithaca, NY

On the basis of the testimony from the witnesses during the 1976 hearings, the McGovern committee staff wrote the infamous report titled *Dietary Goals for the United States*, releasing it at a press conference in January 1977. A month later, in February, the Senate voted to merge the McGovern committee into a subcommittee of the Committee on Agriculture, Nutrition and Forestry by the end of the year.

As Marion Nestle in *Food Politics* notes, the report stated six goals, of which the first was to increase carbohydrate consumption to 55-60% of caloric intake. The remaining five, however, clearly meant eat less: reduce fat (to 30% of calories), saturated fat (to 10%), cholesterol (to 300 milligrams per day), sugar (to 15% of calories) and salt (to 3 grams per day). To meet these goals, Americans would need to eat more fruit, vegetables, whole grains, poultry and fish. However, they also would have to reduce their intake of meat, eggs, and foods high in fat, butterfat, sugar, and salt, and to substitute nonfat mile for whole milk. As Nestle notes, these last recommendations generated nothing less than an uproar.

As Nestle notes in *Food Politics*, cattle ranchers, egg producers, sugar producers and the dairy industry registered strong protest at the very idea that Congress might be telling the

public that their products were bad for health. The cattle industry, especially in McGovern's home state of South Dakota, demanded the report's immediate withdrawal. Meat and egg producers called for (and got) additional hearings to express their views.

There was some skepticism expressed about the report from some scientists and the AMA. However, most of the opposition derived directly from the profound economic implications of the report. For example, meat (beef, lamb, pork) poultry, fish, dairy foods and eggs provided 50% of the fat, 62% of the saturated fat and 94% of the cholesterol in the American food supply in 1970. To advise the pubic to consume less fat, saturated fat and cholesterol was to advocate eating less of these major food groups.

Under intense pressure, the McGovern committee capitulated and issued a revised edition of the *Dietary Goals* late in 1977. A few key things of this revised report was that it 1) increased salt allowance from 3 to 5 grams per day 2) added the statement "some consideration should be given to easing the cholesterol goal for pre-menopausal women, young children and the elderly in order to obtain the nutritional benefits of eggs in the diet" and 3) replaced the statement "reduce consumption of meat" with the less offensive "choose meats, poultry, and fish which will reduce saturated fat intake." Nick Motten, the committee staff member who had drafted the original report, objected to the compromises and was asked to resign from the committee.

All the furor over *Dietary Goals* did nothing to help Senator McGovern's political career as he was defeated when he ran for re-election in 1980.

1978

Professor of Nutritional Biochemistry, Cornell University, Ithaca, NY

Senior Scientific Consultant, Life Sciences Research Office, FASEB, Bethesda, MD (Sabbatical leave)

1978-1979. Member of National Academy of Sciences panels on saccharin carcinogenicity that showed difficulties assessing cancer risks, especially as related to public perceptions of risk. As Campbell recalls, "This was another experience demonstrating how science can be so corrupted and distorted both by commercial interests and politicians. Soft drink companies went to extraordinary lengths to defend their use of saccharin, for example, claiming that it was the last of the non-nutritive, non-caloric sweeteners on the market. They made great claims throughout the marketplace that they were serving the public who wished to lose weight by consuming low calorie soft drinks. Ironically, however, not only was the experimental testing of saccharin for its carcinogenicity seriously challenged but in reality, experimental rats consuming levels of saccharin equivalent to human use actually became somewhat hypoglycemic and

consumed more calories only to gain weight! This experience, even today, demonstrated for me that all parties to this dispute, industry, government, academic science and media, came away from the experience with seriously tarnished reputations, leaving in their wake a very confused public." Campbell on T. Colin Campbell Foundation website.

In spite of the compromises, the *Dietary Report* of 1977 proved to be a turning point and set a standard for all subsequent dietary recommendations and changed the course of nutrition education in America. For example, the American Society for Clinical Nutrition convened a committee to respond to the "biased arguments" of the scientists who had opposed the *Dietary Goals* and to conduct a major review of the existing research. As Nestle notes in *Food Politics*, to the surprise of many, the committee concluded that research demonstrated impressive increases in disease risks from consuming too much fat, cholesterol, salt, sugar and alcohol, and that the risks could be reduced by eating less of these factors and therefore their food sources.

1979

Professor of Nutritional Biochemistry, Cornell University, Ithaca, NY

Senior Scientific Consultant, Life Sciences Research Office, FASEB, Bethesda, MD (Sabbatical leave)

In 1979, the National Cancer Institute issued recommendations consistent with the Dietary Goals in its first statement on the role of diet in cancer risk. By the late 70s, scientists were in substantial agreement that similar dietary changes could help prevent the two most important causes of death in America – coronary heart disease and cancer.

The Department of Health, Education and Welfare issuestynd *Healthy People*, a report form the surgeon general intended to "encourage a second public health revolution in the history of the United States … It represents an emerging consensus among scientists and the health community that the nations health strategy must be dramatically recast to emphasize the prevention of disease."

The *Healthy People* report started the development of ten-year plans to improve the health of the nation.

1980

Professor of Nutritional Biochemistry, Cornell University, Ithaca, NY

The idea for the famous China Study began in 1980–81, during discussions between T. Colin Campbell at his laboratory in Cornell and Chen Junshi, Deputy Director of Institute of Nutrition and Food Hygiene at the Chinese Academy of Preventive Medicine. They

were later joined by Richard Peto of the University of Oxford – Professor of Medical Statistics and Epidemiology as of 2012 – and Li Junyao of the China Cancer Institute.

The China-Cornell-Oxford Project—the "China-Oxford-Cornell Study on Dietary, Lifestyle and Disease Mortality Characteristics in 65 Rural Chinese Counties," called in the book "the China Study"—was a comprehensive study of dietary and lifestyle factors associated with disease mortality in China, which compared the health consequences of diets rich in animal-based foods to diets rich in plant-based foods among people who are genetically similar.

1980-1981. Dr. Junshi Chen from Chinese Institute of Food and Nutrition Science, one of the first Chinese scholars to visit U.S. after rapproachment, does 8-month research sabbatical in Campbell laboratory. Dr. Chen had headed up a research group in China who were showing an effect of selenium supplementation on the reduction of a heart condition of a heart condition children, Keshan Disease. Dr. Chen also was the first senior scientist in China to visit the U.S. for a sabbatical leave. Although those early findings became more complex over time, they illustrated a nutrient effect on the development of a chronic degenerative disease. While he was in the U.S., we learned of the release of an impressive series of atlases showing a highly unique geographic distribution of various cancers, based on a nationwide survey of cancer mortality rates in 2,400 counties. We therefore decided to arrange for joint funding from NIH in the U.S. and the Chinese Ministry of Health in Beijing to undertake a diet and lifestyle survey in 130 carefully selected villages in rural China. At about the same time, we invited Sir Richard Peto at Oxford University, a world-renowned epidemiologist, and Dr. Li Junyao, lead author of the cancer atlas report, to join our group. This project became the first joint project between the U.S. and China." Campbell on T. Colin Campbell Foundation website.

1980 – 1982. Member of National Academy of Sciences committee on Diet, Nutrition and Cancer that was the first (reasonably) official report recommending for cancer prevention increased consumption of vegetables, fruit and whole cereal grains and decreased consumption of total dietary fat to 30% of total calories. I was a member of this panel and on several occasions represented the committee in congressional hearings and in news media reports. It was an experience demonstrating the enormous sensitivity and interest in diet and cancer." Campbell on T. Colin Campbell Foundation website.

* * *

(What year is this? How should this be incorporated with above from Colin's website information? The following was in response to the Bio questionnaire as to a great challenge in his life.)

One of the greatest challenges of my life occurred when I tried to organize a

comprehensive research project to survey diet, lifestyle and disease characteristics in the People's Republic of China. To make arrangements for such an effort, I first gained the support of a senior scientist from China in my laboratory, Dr. Junshi Chen—the first scientist to spend a sabbatic program in the U.S. (in 1980-81). With support from the U.S. National Cancer Institute (of NIH), I visited the Scientific Attache` at the U.S. Embassy in Beijing so that the U.S. Embassy might provide their 'moral' support. This man would have made Hitler proud with his very negative comments about China. He told me that my suggestion of developing a project with China was patently ridiculous and his office would not support such an effort. He was, fortunately, replaced in another 6 months or so. I therefore went back to his replacement and posed the same question. I told him that I had a letter of support for the idea from a very high-ranking health official in China and a supporting letter from his office would be very helpful. At first, he did not agree, but with more persistence, he agreed to sign a letter that I had prepared for him.

This letter of support from the U.S. embassy secured agreement of my Chinese colleagues to go forward with the project. This primarily meant getting the necessary funding, which mostly came in the form of an NIH grant that was to last for 10 years. Most importantly, I was able to garner the collegial support of many people, most notably senior scientists at the University of Oxford, Cornell, the Chinese Academies of Preventive Medicine, and the Academy of Medical Sciences along with my own research team, that of Dr. Chen in China and a large number of other very constructive people in China, the U.S., the U.K. and scientists located at a total of 24 institutions. There still were what was generally thought of as insurmountable challenges along the way but, fortunately, the inertia of this project, once underway, could not be stopped.

I was then involved in repeating this effort by organizing a second in-depth survey comparing mainland China and Taiwan. Because they had no formal relations, I spent about two years working at high levels in both governments, finally to have a meeting at a third party venue (Seoul, South Korea) to sign the agreement and move ahead.

Together, these China projects have become, in some modest degree, historical. The first project (the one that is best known) was the first joint research project between the U.S. and Mainland China while the second was the first formal interchange between Mainland China and Taiwan.

There have been many challenges in my professional world, many of which are turned into personal insults and attempts to discredit my work and my reputation that are hard if not impossible to defend unless I make more visible those who insult. Knowing that this same tactic occurred in past years helps me psychologically because I try to be a bystander (not always successively), knowing that these attacks are nothing more than repetitions of past offenses. It's a game that cycles over the years without end. It's a normal process that comes and goes with change. But probably more troublesome is my also knowing that such tactics in the past have too often achieved their intended purpose,

thus causing great societal harm. I like to believe that knowing the nature and purpose of this game allows us to plan better strategies to win the argument.

All of these challenges served a purpose. Mainly, it illustrated the exceptional contrariness of so many people and institutions that has existed for more almost two centuries to the proposition that we ought to eat whole food, plant-based diets. There is something almost guttural, something sacred about this resistance. To tamper with this issue is akin to petting a cobra or rowing the Queen Elizabeth across the Atlantic. To ask what has my greatest challenge in life is almost quaint. At times, I ask myself why did I follow this path of walking over hot coals with my bare feet, actually and naively believing that I would get burned. I had a great career going for so many years, working with such warm people on such exciting projects

1981

Professor of Nutritional Biochemistry, Cornell University, Ithaca, NY

Summary of 22 studies by R. Peto and colleagues consistently showing higher lung cancer rates with lower levels of circulating beta-carotene. This report generated considerable public interest in a role for a nutrient in cancer causation. Unfortunately, the commercial sector interpreted this finding to mean that beta-carotene supplementation could help reduce cancer risk. Large human studies were organized and funded to test this hypothesis that eventually led to consistent findings that beta-carotene in the form of a supplement actually was associated with lower lung cancer risk. Campbell on T. Colin Campbell Foundation website.

Atlas of Cancer Mortality in the Peoples Republic of China published in response to Chinese Premier Cho En Lai's affliction with cancer. Largest survey of disease mortality ever undertaken. Included death rates for about a dozen types of cancer and three dozen other causes of death for more than 2,400 Chinese counties and 880 million (96%) of their citizens. Findings affirmed that in China, cancer was geographically localized. Campbell on T. Colin Campbell Foundation website.

Sir Richard Doll and Sir Richard Peto summarized for the U.S. Congress published research findings on diet, lifestyle and cancer and conclude that 10-70% of human cancers attributed to diet while only 2-3% of all cancers attributed to genes. This was a striking finding that suggested that diet was far more important than genes in causing cancer. Campbell on T. Colin Campbell Foundation website.

Studies showing that lung cancer cases among 14,000 smokers is infostantially lower when consuming beta-carotene containing vegetables, that risk for lung cancer among heavy smokers is reduced after about 10 years of non-smoking and that latent but unobserved experimental cancer would be promoted. These studies collectively suggested

that cancer not only could be prevented by plant-based foods but also that it might be reversed by these same foods. Campbell on T. Colin Campbell Foundation website.

1982

Professor of Nutritional Biochemistry, Cornell University, Ithaca, NY

Book. Grobstein, C., Cairns, J., Berliner, R., Broitman, S., Campbell, T.C., Gussow, J., Kolonel, L.N., Kritchevsky, D., Mertz, W., Miller, A.B., Prival, M.J., Slaga, T., Wattenberg, L. Diet, Nutrition and Cancer: (Palmer, S., Project Director). National Academy Press, Washington, D.C. 1982.

1983

Professor of Nutritional Biochemistry, Cornell University, Ithaca, NY

Senior Science Advisor, American Institute for Cancer Research, Falls Church, VA

Director, Nutrition and Cancer Program Project (Collaborative Project with the Chinese Academy of Preventive Medicine, Chinese Academy of Medical Sciences/China Cancer Institute and University of Oxford) (1983 – Present)

In 1983, two villages were chosen at random in each of 65 rural counties in China and 50 families were chosen at random in each village. The dietary habits of one adult member of each family were examined – half male, half female – and the results compared to the death rates in those counties from around 48 forms of cancers and other diseases during 1973–75.

The study examined mortality rates from 48 forms of cancer and other chronic diseases from 1973 to 75 in 65 counties in China, and correlated them with 1983–84 dietary surveys and bloodwork from 6,500 people, 100 from each county. It concluded that counties with a high consumption of animal-based foods in 1983–84 were more likely to have had higher death rates from "Western" diseases as of 1973–75, while the opposite was true for counties that ate more plant foods in 1983–84. The study was conducted in those counties because they had genetically similar populations that tended, over generations, to live in the same way in the same place, and eat diets specific to those regions.[7]

1983-1984. Nationwide survey of diet and lifestyle characteristics conducted in China, then combined with the 1973-75 Chinese disease mortality to produce the 1990 monograph titled “Lifestyle and Mortality in China” a joint collaboration of the Chinese Academy of Preventive Medicine and the Chinese Academy of Medical Sciences, Oxford University and Cornell University and jointly funded by the U.S. National Cancer

Institute, the Chinese government and the U.K. Imperial Cancer Research Fund. Campbell on T. Colin Campbell Foundation website.

1984

Professor of Nutritional Biochemistry, Cornell University, Ithaca, NY

Senior Science Advisor, American Institute for Cancer Research, Falls Church, VA

Book. Roe, D.A. and Campbell, T.C., Editors. Drugs and Nutrients, The Interactive Effects. Marcel Dekker, Inc., New York. 1984.

1985

Professor of Nutritional Biochemistry, Cornell University, Ithaca, NY

Senior Science Advisor, American Institute for Cancer Research, Falls Church, VA

Visiting Scholar, Green College, University of Oxford, Oxford, England

Jacob Gould Schurman Professor Emeritus of Nutritional Biochemistry, Cornell (185 – Present)

Demonstrated reversibility of early pancreatic cancer in experimental animal studies with altered fat diets featured on cover of Journal of National Cancer Institute.

RJ Reynolds buys Nabisco and puts its knowledge of tobacco marketing into processed food marketing.

One of the most unusual things that happened to me was my discovery of an amazing book in the Royal College of Surgeons Library in London in 1985-86 when I was a Visiting Fellow at Oxford University. The book, written in 1846, wrote about a surgeon-turned-general practitioner who wrote about a concept that really resonated with me, as if I had written the book itself. It was focused on the topic of 'the constitutional nature of disease', especially in reference to cancer. It was special in reference to the books that were subsequently published from then up until about 1937 but especially it was special because of the author of that book turns out to be my grandmother's uncle. His name, McIlwain, is the middle name of my late father and my son, Tom, who wrote The China Study with me. This discovery of course was in 1985-86, 7-8 years after our son had been named after my father. Funny? Not really. But unusual? Yes.

1986

Senior Science Advisor, American Institute for Cancer Research, Falls Church, VA

Visiting Scholar, Green College, University of Oxford, Oxford, England

Professor Kenneth Carroll summarized findings from multiple countries showing that a higher animal fat intake but not plant fat was associated with increased breast cancer mortality similar to earlier reports in a 1975 conference on diet and cancer.

1986-1992. Reports showing that putative osteoporosis (as bone fracture rates) was associated with higher consumption of calcium and animal protein and that urinary calcium is increased with modestly increased consumption of protein (mostly animal based). Campbell on T. Colin Campbell Foundation website.

One of the greatest challenges in my career occurred when I accepted an offer to be the Senior Science Advisor of a new cancer research funding organization, The American Institute For Cancer Research (AICR), whose mission was to solicit public funding for cancer research. I persuaded them to focus on investigating cancer by studying its 'nutritional' characteristics. I had just finished my membership on an expert panel of the National Academy of Sciences and my co-authorship of their report, "Diet, Nutrition and Cancer", which was said to be the most sought after report in the history of that distinguished organization. In addition, my congressional testimonies and my being featured in popular news magazines had put me very much in the public spotlight. This, of course, was a double-edged sword. On the one hand, it had brought a long-suffering idea about nutrition to the attention of the American public. But also, it brought an unsavory, visceral and exceptionally hostile attack from those who were pushing the traditional diet high in protein (especially animal-based protein) and fat, while being low in antioxidants, complex carbohydrates and vitamins and minerals. It was a contest between health for the many versus wealth for the few. It also led to some vicious attacks on my reputation for my having participated on this panel and having become so visible with the American public. In addition to the attacks that arose in the scientific community, it also led to a petition that I be expelled from my professional society (a hearing was held by the executive committee in Bethesda MD that required my testimony). Of the eight members, the vote was 6-0 against the proposal for my expulsion, with two abstentions, who were colleagues of mine at Cornell. The two individuals proposing my expulsion held major influence in the society, both of whom had been past presidents of the society and both of whom were major consultants to the food industry. All of this came on the heels just two weeks before, of an election for president of the society, my being one of the candidates and the choice of the nominating committee. However, surprising to many, I 'lost' the election just at the time when the petition to have me expelled was submitted. An attending person to the counting of the vote—a friend of mine—told me that I had easily won but the report to the board was to

the contrary.

The AICR initiative was then to be repeated in England, under the name of the World Cancer Research Fund (WCRF). Again the reaction against this new cancer research organization was furious. The BBC equivalent of "Sixty Minutes" was persuaded to undertake an investigation on the alleged scurrilous nature of this organization. I was invited to attend a BBC interview with the president of WCRF (a non-scientist who also was the president of AICR). I confirmed my views on the professionalism of the staff and the worthiness of the science. After that interview, they 'pulled' the airing of the interview.

I also went to Holland on behalf of WCRF to consider establishing a WCRF office in that country. I had previously lectured there, both at a major university (Wageningen) and at a couple conferences in Amsterdam. Thus I knew some key people in research. I visited the Director of the government's cancer research agency and, before going into his office, I noticed that of the 35 research grants that his office was funding that year, only one dealt with diet and cancer (one that later found meat, if anything, to have a preventative effect on cancer development). Naively, I was reasonably enthusiastic to make this man's acquaintance and to apprise him of the evidence on nutrition and cancer. I mentioned to him that the research funding provided by his office was very limited and WCRF might be able to provide funding for qualified Dutch scientists as well. He made it clear that my ideas about nutrition were not mainstream and were not welcome. We parted, but about one year later, in a front page article in the Amsterdam Times in a story on cancer treatment and research, this man told the reporter that he had kicked me out of his office.

My participation as Senior Science Advisor of AICR/WCRF was difficult, almost beyond belief at times, over about a dozen years. Throughout, there were several quite serious costs to my professional standing in the scientific community, including withdrawal of a nomination for a coveted award from my professional society ("to let the dust settle down for a while"—never did), choosing our department director for membership for the so-called prestigious National Academy of Sciences (he was considered by many to be the most influential consultant for the dairy industry in the world), cancellation of what had been a very positive association with the media support group at Cornell, among many other such events.

1987

Senior Science Advisor, American Institute for Cancer Research, Falls Church, VA

Book. Kinlen, L., and Campbell, T.C. (editors). prospects in clinical, epidemiological and oncology. Cancer Surveys 6 (No. 4), 1987

1988

Philip Morris buys Kraft Foods and puts its knowledge of tobacco marketing into processed food marketing.

1989

1989-1990. Re-surveyed same 65 (plus 4) counties in Mainland China along with 16 additional counties in Taiwan for a total of 85 counties, 170 vilalges. These date are showing the effect of Westernization of dietary habits upon the development of cancer and other chronic degenerative diseases (cancer, cardiovascular diseases, etc.). Campbell on T. Colin Campbell Foundation website.

Philip Morris combines Kraft Foods with General Foods to form Kraft General Foods and puts its knowledge of tobacco marketing into processed food marketing.

1990

Book. Chen, J., Campbell, T.C., Li, J., Peto, R. Diet, lifestyle and mortality in China. A study of characteristics of 65 Chinese counties. Joint publication of: Oxford University Press, Cornell University Press and The People's Medical Publishing House, 1990. The results of the China Study begin to emerge in this book, the 229th publication in Dr. Campbell's career.

1991

Honorary Professor, Chinese Academy of Preventive Medicine
(1991 – Present)

Caldwell Esselstyn, Jr., MD of Cleveland Clinic, at a Tucson, AZ conference, reported dramatically reversed advanced heart disease among 18 seriously ill patients consuming a diet free of animal products and any added oil. Campbell on T. Colin Campbell Foundation website.

1992

Senior Science Advisor, World Cancer Research Fund and American Institute for Cancer Research

1993

Senior Science Advisor, World Cancer Research Fund and American Institute for Cancer Research

1994

Organizer and Co-Chair, Expert Panel, Dietary Prevention of Cancer Worldwide

Senior Science Advisor, World Cancer Research Fund and American Institute for Cancer Research

1994-1996. Reports showing that lung cancer rates increased with beta-carotene from supplements but decreased with beta carotene with food, demonstrating importance of consuming nutrients as foods not as dietary supplements. Campbell on T. Colin Campbell Foundation website.

1995

Organizer and Co-Chair, Expert Panel, Dietary Prevention of Cancer Worldwide

Senior Science Advisor, World Cancer Research Fund and American Institute for Cancer Research

1995-1996. Closed experimental laboratory operations to focus on delivering message to the public. Considerable concern that experimental research has become too reductionist. Campbell on T. Colin Campbell Foundation website.

1996

Organizer and Co-Chair, Expert Panel, Dietary Prevention of Cancer Worldwide

Senior Science Advisor, World Cancer Research Fund and American Institute for Cancer Research

1997

Organizer and Co-Chair, Expert Panel, Dietary Prevention of Cancer Worldwide

Senior Science Advisor, World Cancer Research Fund and American Institute for Cancer Research

1999

The heads of the world's largest processed food companies – from Coca-Cola to Nabisco – gathered at Pillsbury headquarters in Minneapolis for a secret meeting. On the agenda

the emerging epidemic of obesity and what to do about it. Increasingly, the salt, sugar and fat laden foods thee companies produced were being linked to obesity and a concerned Kraft executive took the stage to issue a warning: there would be a day of reckoning unless changes were made. The executive then launched into a damning PowerPoint presentation making the case that processed food companies could not afford to sit by, idle, as children grew sick and class-action lawyers lurked. To deny the problem, he said, is to court disaster.

When he was done, the most powerful person in the room – the CEO of General Mills – stood up to speak, clearly annoyed. And by the time he sat down, the meeting was over.

Since that day, with the industry in pursuit of its win-at-all-costs strategy, the situation has only grown more dire. Every year, the average American eats thirty-three pounds of cheese, (triple what we ate in 1970) and seventy pounds of sugar (about twenty-two teaspoons a day). We ingest 8,500 milligrams of salt a day, double the recommended amount, and almost none of that comes from the shakers on our table. It comes from processed food. It's no wonder that one in three adults and one in five kids is clinically obese. It's no wonder that twenty-six million Americans have diabetes. The processed food industry in America accounts for $1 trillion a year in sales and the total economic cost of this health crisis is approaching $300 billion a year.

There are labs where food scientists use cutting-edge technology to calculate the "bliss point" of sugary beverages or enhance the "mouthfeel" of fat by manipulating its chemical structure. Marketing campaigns are designed to redirect concerns about the health risks of their products by dialing back on one ingredient and pumping up the other two and tout the new line as "fat free" or "low salt." Concerned executives confess they could never produce truly healthy alternatives to their products even if serious regulation became a reality.

Flyleaf for *Salt, Sugar, Fat* by Michael Moss.

2001

Eric Schlosser's *Fast Food Nation* is published.

After graduating from Cornell University, Colin Campbell's son Tom had pursued a professional acting career. He was living in Chicago working as an assistant paralegal and acting in late night shows on the side. Around this time, he had a conversation with his father that changed his career forever. Dr. Campbell was interested in writing a book for the public about his life's work in nutritional research and policy-making, and he wanted the help of his son. They agreed it would take one year to finish and that after this Tom

would go back to his previously planned life. Tom agrees to help his father write the book.

The year of work turned into four years of work. When *The China Study* was finally published in 2005, Tom's life trajectory had changed forever. As coauthor of *The China Study*, he had grown into someone with a fair bit of knowledge and a lot of passion for nutrition, basic science, original research articles, and communication.

2002

Colin Campbell and his son writing their new book on nutrition. The book is written at a time when the meat-based Atkins Diet is still very popular. Dr. Atkins had popularized his meat diet method in a series of books, starting with *Dr. Atkins' Diet Revolution* in 1972. In his second book, *Dr. Atkins' New Diet Revolution* (2002), he modified parts of the diet but did not alter the original concepts.

2005

Published *The China Study* co-authored with Thomas M. Campbell II.

2005-2008. Presented over 200 lectures in the U.S. and abroad to diversity of audiences, gaining perspectives on the diet for multiple ailments and diseases.

2013

Whole published.

AMA declares obesity a disease opening the way for the pharmaceutical industry to create drugs for this disease and make billions of dollars. Dr. Campbell notes that this was a brilliant marketing move.

A report that 70% of Americans are on prescription drugs.

Dr. Campbell visits the Veggie Grill and Lyfe Kitchens on a trip to California. Veggie Grill has 19 locations in California and Oregon and Lyfe Kitchens has a few locations with quotes by Dr. Campbell outside the stores. See websites for these at http://www.veggiegrill.com and www.lyfekitchen.com.

Colin Campbell writes that "A man-wife attorney team called to say how they are getting together a top-flight, professional website on this idea and are writing up a story on myself and my son and our work. They are doing some surveys of people who are changing their dietary lifestyle and learning that about 80% are doing so because of having read *The China Study*. The next day, a couple people sent me a new website devoted to vigorously destroying this idea, specifically attacking *The China Study* and

me. In the late 1960s, when I was in Manila, I ventured out into the ‘quiet’ eye of a horrendous typhoon, then before I got back to the hotel experienced the sudden change of the wind direction as the eye was passing. I don’t think this vortex of contrasting winds are any different--indeed, they are more dangerous.”

Sept. 10, 2013. Colin Campbell is invited to visit film legend James Cameron at Cameron’s home in Malibu, California. Cameron publicly told Colin that after he saw the film “Forks Over Knives” he went straight to his refrigerator and emptied it of most things. As Colin wrote to me, “He sincerely knows and wants to get involved in how to change the world by deciding what to eat.”

NOTES

Why Diets Have Changed Since the 30s

8/11/13

John,

I don't have a copy of The China Study with me but if you go to the last chapter near the end, you may find a short few comments on my sabbatic year (1985-86) at Oxford University when we were assembling with my Oxford colleagues the data from China and I was involved in doing some history on the diet and cancer relationship.

I had become interested in the history partly because of my being on the National Academy of Sciences Committee on Diet, Nutrition and Cancer (reported in 1982) and partly from the intense reaction (hostility) that that report had catalyzed, especially my role in that report. I was being introduced to a part of science that teemed with snakes who did a lot of hissing. I wanted to know why such negativity. In that search of the history, I learned so much, especially how much that history tells us about our present practices.

I learned that one of the truly significant physicians of the mid nineteenth century may be a great, great uncle of mine through my paternal grandmother of a few miles north of Londonderry where my father was born. The most significant part of this story are the books that he wrote during the 1840-1860s and how he was possessed of a philosophy that I had independently happened upon.

Fantastic story but I still need to document with real birth, death, marriage records the authenticity of these beliefs.

More later,

Colin

T. Colin Campbell
Jacob Schurman Professor E

* * *

Farming changes

* *Monoculture breaks down nature's support for crops* - we have chosen to work against natures natural ways, which is to have a variety of plants and therefore associated wildlife which complements and supports much of the total growing processes.

* *NPK farming to stimulate growth* - NPK minerals accelerate the uptake of micronutrients etc from the soil and these are not being replaced. Selenium (Se) is a classic example of this, and lack of Se is implicated in many chronic disease processes.

* *Soil mineral contents have reduced right across the UK* - these are reduced across the UK and there is evidence for what we are short of available in most areas. (It is interesting to note that the flooding of fields in nature often restores the complete range of minerals)

* *Pesticide use has increased and this is likely to have toxic effects on the human system* - There are data available to show the growth of these aspects of the new farming. Pesticides are poisons that the body has to deal with, albeit in minute doses. Low nutritional status makes the body less able to detoxify effectively.

* *Reduction in mineral content of foods over 60 years demonstrated in government figures.* The average fresh vegetables in our diet in the 1930's , weight for weight, contained 50% more minerals than it does in the 1990's. This is a major and significant change in diet.

* *Growth in use of agrochemicals over time puts a greater stress on the body to clear them*

* *The water we drink contains many additives from farming and pharmacy that put a greater strain on the body's detoxifying system*

Eating and Social changes - need for fast food

* *Stress at work, advertising influences, susceptibility to infection (antibiotic prescribing as an indicator) all rising* - these all have what is likely to be a major effect on immune response in the body, which is then impaired by low nutritional status.

* *Energy levels and vitality reducing* - there is an accepted reduction in energy in people, accentuated by the poorly understood growth in ME symptoms across many age groups, especially the 10 - 40 years olds. This low energy situation increases the perceived need for stimulant foods for people to keep going (ie sugars, caffeine in Coke, coffee etc)

* *Over the last 70 years there has been a reduction in calorie intake among children and yet they are getting fatter.* 19% reduction in calorie intake in 50 years for boys, and 29% reduction for

girls, but increased sugar consumption! Computers, diet, TV and less exercise as cause. Fewer calories means another source of lower nutrient intake in the body resulting in lower immune strength.

* *1989 - School diets in children show major deficiencies* - all minerals and key vitamins show shortages - e.g. 86% of girls getting below the recommended daily amount of Iron, which is critical to good health. In 2000 there are growing numbers of reports criticising school dinners and school children's diets - we are creating potential major problems here for our young as they grow older in terms of chronic disease patterns related to a breaking down of the immune system.

* *Reduction in exercise at school* (linked to lower nutrient status through reduced calories). Schools no longer hold exercise as important in children's week at school - it is reduced by up to 80% from 50 years ago.

* *30% reduction in fresh vegetables and fruit* - MAFF data from 1970 - people are eating less fresh produce, which would be more helpful to them than cooked produce.

* *Evidence suggest Life expectancy has reduced in recent times, not increasing as is commonly reported.* When the comparison is made with all those who get to 20 years old (it was the young dying in the olden days that skewed the figures) - then we are dying younger, it seems. Our own evidence would suggest an increase in degenerative disease in younger people now.

* *Childhood leukaemia increasing in incidence* - probably not helped by poor nutrition.

Food processing changes

* *Depletions in food - there is a loss of nutrients as a result of food processing - ie manufacture of fast / convenience foods.* Hard to quantify overall, but anything from 20% reduction up to 80% depending on processing methods and the food involved.

* *Additives in food don't help either* - the increasing use of chemicals as food additives to achieve marketing goals. At worst these are mild poisons, and at best they are chemicals the body does not 'see' as food.

Nutrition not considered an important part of food. Colour, texture, taste and calorie content are key in processed foods.

We are trying to find out what % of total food consumption is processed in an average diet. We estimate that somewhere between 70 to 80% of all food eaten is processed in some way, with the associated reduction in nutrients.

Disease changes

** Degenerative diseases significantly on the increase* - Heart disease, diabetes inc childhood diabetes, cancer (especially breast and prostate cancers), arthritis, obesity, childhood leukaemia - all represent an increasing inability of the body due to low nutrient status (especially antioxidants) to cope with the modern environmental and lifestyle challenges.

** There is proliferation of nutrition based research highlighting diseases linked to nutritional status* - we are not looking at this issue as a whole yet, but Vets know with animals that unless the grass has sufficient nutrients, or their feed does, the animals will get ill. In many ways we treat our animals better than ourselves when it comes to nutrition, perhaps because farmers have to pay vets to treat sick animals, whilst in the UK at least there is not the same direct, immediate financial penalty for becoming ill.

The issue - restated

> *The reduction in nutritional status over a 70 year period is contributing to, and is likely be the major cause in the rapid rise in degenerative diseases.*

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Moss, Michael. *Salt, Sugar, Fat*.

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Pollan, Michael.

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Stuart, _____. *Waste*.

Biography
Outside Readers/Advisors

Veggie Grill Owners (Fastest growing national vegetarian restaurant chain)
Kevin Boylan
T.K. Pillan
Greg Dollarhyde
Ray White

James Cameron

Dr. Colin Campbell, Jr.

Caldwell B. Esselstyn, Jr., M.D.

Dr. Esselstyn received his B.A. from Yale University and his M.D. from Western Reserve University. In 1956, pulling the number-six oar as a member of the victorious United States rowing team, he was awarded a gold medal at the Olympic Games. He was trained as a surgeon at the Cleveland Clinic and at St. George's Hospital in London. In 1968, as an army surgeon in Vietnam, he was awarded the Bronze Star. Dr. Esselstyn has been associated with the Cleveland Clinic since 1968. During that time, he has served as president of the staff and as a member of the board of governors. He chaired the clinic's Breast Cancer Task Force and headed its section of thyroid and parathyroid surgery.

In 1991, Dr. Esselstyn served as president of the American Association of Endocrine Surgeons. That same year he organized the first National Conference on the Elimination of Coronary Artery Disease, which was held in Tucson, Arizona. In 1997, he chaired a follow-up conference, the Summit on Cholesterol and Coronary Disease, which brought together more than 500 physicians and health-care workers in Lake Buena Vista, Florida. In April 2005, Dr. Esselstyn became the first recipient of the Benjamin Spock Award for Compassion in Medicine. He also received the Distinguished Alumnus Award from the Cleveland Clinic Alumni Association in 2009.

His scientific publications number more than 150. "The Best Doctors in America: 1994−1995," published by Woodward and White, cites Dr. Esselstyn's surgical expertise in the categories of endocrine and breast disease. In 1995 he published his benchmark

long-term nutritional research on arresting and reversing coronary artery disease in severely ill patients. That same study was updated at 12 years, making it one of the longest longitudinal studies of its type. It is most compelling, as no compliant patients have sustained disease progression. Today, 20 years later, compliant patients continue to thrive.

Dr. Esselstyn and his wife, Ann Crile Esselstyn, have followed a plant-based diet for more than 20 years. They work together to counsel patients both in Cleveland, where they live, and in upstate New York during the summer, at the farm where Dr. Esselstyn grew up. Dr. Esselstyn concentrates on the medical details, and Ann focuses on healthy foods and how to prepare them.

Neal Barnard, M.D. Dr. Barnard is adjunct associate professor of medicine at the George Washington University School of Medicine and founder and president of Physicians Committee for Responsible Medicine. He is the author of *Dr. Neal Barnard's Program for Reversing Diabetes* and other books.

Junshi Chen, Ph.D. Dr. Chen is a senior research professor at the China Center for Disease Control and Prevention in Beijing.

Connie B. Diekman, MEd, RD, FADA Connie is director of university nutrition at Washington University in St. Louis, Missouri, and former president of the American Dietetic Association.

David Klurfeld, Ph.D. Dr. Klurfeld is national program leader, human nutrition for the United States Department of Agriculture.

Matthew Lederman, M.D., and Alona Pulde, M.D. Drs. Lederman and Pulde are physicians and founders of Exsalus Health and Wellness Center in Los Angeles, California. They are co-authors of *Keep It Simple, Keep It Whole: Your Guide to Optimum Health*.

Doug Lisle, Ph.D. Dr. Lisle is a psychologist and director of research at the TrueNorth Health Center in Santa Rosa, California. He is co-author of *The Pleasure Trap*.

Terry Mason, M.D. Dr. Mason serves as commissioner for the Department of Public Health in Chicago, Illinois.

John McDougall, M.D. Dr. McDougall is an internal medicine physician and founder of Dr. McDougall's Health and Medical Center in Santa Rosa, California. He has authored *The McDougall Plan* and numerous other books.

Pam Popper, N.D. Pam is founder and executive director of the Wellness Forum in Columbus, Ohio.

Marion Nestle.

Professor & Chair of Department of Nutrition and Food Studies at New York University. Author of *Food Politics*. Marion Nestle is Paulette Goddard Professor in the Department of Nutrition, Food Studies, and Public Health at New York University, which she chaired from 1988-2003. She is also Professor of Sociology at NYU and Visiting Professor of Nutritional Sciences at Cornell. She earned a Ph.D. in molecular biology and an M.P.H. in public health nutrition from University of California, Berkeley. Previous faculty positions were at Brandeis University and the UCSF School of Medicine. From 1986-88, she was senior nutrition policy advisor in the Department of Health and Human Services and editor of *The Surgeon General's Report on Nutrition and Health*. Her research examines scientific and socioeconomic influences on food choice, obesity, and food safety, emphasizing the role of food marketing.

She is the author of three prize-winning books: *Food Politics: How the Food Industry Influences Nutrition and Health; Safe Food: The Politics of Food Safety;* and*What to Eat.* She also has written two books about pet food, *Pet Food Politics: The Chihuahua in the Coal Mine* and *Feed Your Pet Right* (with Malden Nesheim). Her most recent book is *Why Calories Count: From Science to Politics* (also with Dr. Nesheim). Her new books in 2013 are the tenth anniversary edition of *Food Politics* (with a foreword by Michael Pollan, the paperback edition of *Why Calories Count,* and a new book, *Eat, Drink, Vote: An Illustrated Guide to Food Politics,* to be published in September by Rodale Books.

She writes the monthly (first Sunday) Food Matters column for the *San Francisco Chronicle,* blogs daily (almost) at www.foodpolitics.com, and twitters @marionnestle. In 2011, the University of California School of Public Health at Berkeley named her as Public Health Hero, Time Magazine included her Twitter among its top most influential 140 and its top 10 in health and science. Writing for Forbes, Michael Pollan ranked her as the #2 most powerful foodie in America (after Michelle Obama), and Mark Bittman ranked her #1 in his list of foodies to be thankful for. She was awarded an honorary Doctor of Science degree from Transylvania University in 2012.

* * *

Film
Forks Over Knives

Brian Wendel
Creator and Executive Producer

Brian has had a longtime interest in nutrition and health. In the summer of 2008, having read *The China Study* by T. Colin Campbell, he realized that the scientific case for preventing and even reversing degenerative disease by means of a whole-foods, plant-based diet was greater than he had ever imagined. This concept deserved a "seat at the table" in the national health discussion.

Brian decided the most effective way to bring this message to a broad audience was by feature film. He recruited an award-winning veteran production team and spent nearly two years producing *Forks Over Knives*, his first feature film. His vision for the film was that it be based in science and at the same time provide a moving experience by exploring personal stories and historical elements.

Lee Fulkerson
Writer and Director

Lee has written, produced, directed, or supervised nearly 170 hours of documentary programming and has won 19 international awards for his work. These include the prestigious CINE Special Jury Award for best broadcast historical program of 2003, network or cable, awarded for his pilot episode of the History Channel series *The Color of War*. He produced that 17-hour series, as well as the 35-hour *The Great Ships* series, also for the History Channel. Most recently, Lee wrote The History Channel's two-hour documentary special, *Seven Signs of the Apocalypse*. Previously, he was executive producer and head writer of the seven-hour series *Showdown: Air Combat* for the Discovery Military Channel. He wrote, produced, and directed the 90-minute special *The Crash of Flight 191* for the History Channel, and co-wrote *The Long March*, a two-hour special for History International. Lee also wrote or produced 11 episodes of A&E's *Biography* series, including programs on Michelangelo, George Washington, and Benjamin Franklin. In the realm of fiction, Lee co-wrote the screen story "Ascent" in the television drama series *The Dead Zone* for the USA Television Network.

John Corry
Producer

John's feature film credits include Universal Studios' *The Rundown, The Ten Commandments*, and *The Face of Evil: Reinhard Heidrich*. He has produced over 200 documentary programs, most recently *The Wild Yak Patrol* for Animal Planet and *The Long March* for History International. He created and supervised a number of popular long-running documentary television series, including *Safari Tracks* for Fox in syndication, *The Color of War* and *Sworn to Secrecy* for the History Channel, *Celebrity Wings* for Discovery Networks, and *Weapons at War* for the A&E Network. John recently produced several celebrity-narrated short films for the International Fund for Animal Welfare, including campaigns on whale hunting, the Canadian seal hunt, companion animal rescues, and Kenya's Tsavo National Park wildlife sanctuary. His three-hour television special, *The Last Days of WWII*, was nominated for an Emmy, and his acclaimed all-color WWII series *The Color of War* was recognized with the CINE Special Jury Award as the best broadcast historical program of 2003, network or cable.

Allison Boon,
Co-producer

Allison began working on documentaries in 2003 as an associate producer on the long-running

True Hollywood Story series for The E! Network. Allison went on to Actuality Productions' award-winning History Channel series, *Modern Marvels*. Within a year, she became director of research and helped develop over 100 hours of programming for networks like the History Channel, National Geographic, and Bravo. She began writing and producing *Modern Marvel* episodes in 2007, including "Measure It," "Halloween Tech," "Traps," and "It Came from Outer Space." That same year, Allison joined the field team on Universal's breakout comedy feature, *Bruno*.