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Go With a Winner!

**The Seed Learning Center:
Snapshot of a Graduation
Ceremony**

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Abstract

Much has been written about the need for a new human relationship of care for the earth, one that holds sacred, earth's air, water, and soil. Today, concerned individuals scan the horizon looking for signs of a newly emerging consciousness, a spiritual dawn: a new day that insists that these essential natural resources should be protected — should be conserved safe and clean. And of earth's precious seeds, what of those? And further still, earth's precious edible seedcrops, what of those? Will those be revalued and be seen as the treasures they most assuredly are? What signposts inform us that such a dawn is indeed upon us, the soft glow of an immense impending luminosity after a long night? A great dawn, its luminosity spilling into the world . . . One place to look for such signage, surely would be in the schools. And this paper does just that. In this write-up, a professional journalist visits a school campus — The Seed Learning Center, the school of The Kusa Seed Society — investigating and reporting on the institution's activities and purpose. The reporter interviews the school's founder, and attends the school's first graduation ceremony. Dedicated to earth's edible seedcrops, the school bestows a degree certificate, "Mastery of Seed Arts and Human Foodgrains," upon its graduates. Those earning the degree have successfully completed a specialized course of study in the subject-area of human foodgrains. Our reporter, alert and on-duty, synthesizes a blueprint for the new millennium; a dynamic, rousing sermon delivered by the graduation's keynote speaker, the planet's foremost scholar of soyfoods. An overview of the 32 graduating students is given, followed by a detailed description of each of the individual student degrees awarded. Those earning the Master of Seed Arts and Human Foodgrains certificate have completed specialized projects featuring uses of edible seedcrops; uses fully pertinent to the 21st century. Student projects described in detail in this paper include the following: Folk maize strains; amylopectin starch; cereal dyes; chickpeas; oilseeds; lentils; t'ef; einkorn, emmer, and spelt wheats; couscous and bulgur; grain sorghum; Tartary buckwheat; millets and millet candy; food-barley; naked oats; artisan baking ovens; Job's tears; dehusking apparatus; crop strain fingerprinting (crop-strain bar coding); public domain crop registration; malting; and much more. 26 pages. Roster of student projects. Bibliography. June 2011

A Note to Readers

Many years ago, the author of this paper took a job as Manager of Buildings and Grounds at a youth camp in the mountains. In the surrounding area were clustered a dozen and a half other similar camps — youth camps, church camps — each with its own campus, and each one independently operated. Officially, these campuses were called "youth camps" or "organized camps." These types of facilities can be found nationwide and even internationally.

As a result of his job, your author became familiar with these facilities. All were laid out along similar lines. All had a large dining hall with a full-scale kitchen. For housing campers, there were tent platforms, screen houses, dormitories, and individual cabins. Sometimes there was a lodge building and often, an outdoor fire-circle, and so forth and so on, all in a setting of great natural beauty with crystal-clear mountain water.

In the dining hall, what kind of food was served? The answer is, it was "junk food" on an institutional scale: cases of government-issued canned food (out-of-date, national-disaster stockpile reserves). Was there any kind of spiritual understanding or emphasis, regarding the food? The answer is, there was none. And the cook, what was she like? The cook was "Big Mama" from the ghetto back in the big city. Poorly educated, poorly paid, low awareness.

One winter, the kitchen pantry roof leaked and snow-melt dribbled in. There were some nice green bottles on the pantry shelf. The leaking roof constantly dripped water onto the bottles and their paper labels gradually softened and eventually fell away. Spring came in its glory and camp opened for the season. Big Mama came to cook and clean. One day, she grabbed those pretty green bottles, twisted the caps off

and poured the contents into the lunch kettles for seasoning ("makes it taste good!"). The lunch bell rang and the dining hall filled with hungry campers and staff. And then? Suddenly, everyone who had eaten the lunch was outside under the pines, retching, convulsed and sick. The entire population of the dining hall was abruptly laid-out on the ground. The green bottles contained ant poison. Arsenic was the active ingredient. No one died but it was close. The worst-off were evacuated down the mountain to the distant emergency-room to have their stomachs pumped. "Come to camp. Treasure your memories." Your author did not witness these events but was told the story by a visitor who did. That visitor had dropped by the camp one day to re-visit the fateful scene.

At the time your author took this camp manager job, he was already ten years into natural foods — using grains as a personal staple food. He was settled on that path and it was going well for him. This plant-food dietary pathway harmonized well with the inspirational natural beauty of the mountain environment of the camp. One day your author was taking some shallow baking pans of millet into the camp kitchen, to roast the grain in the ovens. A visiting camper saw the trays and said "Eeek! What's that?? Bird seed?" It was a sad reminder of the modern divorce between humanity and the "Staff of Life," the foodgrains. The nuances of foodgrains have today become a "forgotten knowledge," a "lost art."

Even less appreciated is the fact that selections from among these classes of plants (the cereals, grain-legumes, oilseeds, and other selected edible seedcrops) are primary healing herbs. They are medicinal substances with powerful preventative and restorative functional properties. This vital knowledge, of the health-positive preventative and restorative properties of the dried fruits of these plants, has acute modern value, yet this knowledge is only faintly and weakly anchored in the society today; in danger of disappearing

completely. One would search far and wide to find a person with any working grasp of it.

It became your author's dream to recover this "lost knowledge," revitalize it, and restore these lost arts to human daily life. Grains are very deep and they are old. They are trustworthy, safe substances for human food. Your author dreamed of operating a school of seedcraft: a place to teach the arts and sciences of the small-scale production and use of the cereals and grain-legumes, oilseeds and other selected edible seedcrops. What use is it in the world, if one person only has this precious knowledge? That is far too isolated and vulnerable. This precious knowledge deserves to be spread, to be propagated. To bring this dream into the world, your author founded a nonprofit, public-benefit organization in 1980, The Kusa Seed Research Foundation (augmented later-on by The Kusa Seed Society).

The enduring goal of these organizations is to open and operate a "Seed Sanctuary" headquarters property; a place where the school of seedcraft can have a home. The physical layout common to organized camps, serves as an excellent template or model. To explain and share the vision in detail with others, your author has written this paper, "Go With a Winner." This writing brings the school to life on paper. This writing is, a "message in a bottle." It has floated from the far shore, over distant seas, to reach your hand and eyes.

The Message in a Bottle

The seedcraft school of the Kusa Seed organization is driven by a philosophically pure embrace of a natural-food lifestyle path, without any dietary sugar or animal-food products, emphasizing organic farming of the crops and an intentional focus on small-scale, both in farming and in food. From the weight of a lifetime of studies in the subject-matter, your author has reached the conclusion that the pursuit and dissemination of this body of "lost art" cannot be achieved

by means of the prevailing competitive capitalist path exhibited in the large society. To confine this knowledge in a proprietary framework, to crank it solely for its cash value, defeats the quest from the start. Many have tried this path. A few succeeded and personally became rich. But the large body of deserving people became only poorer by corking the genie inside capitalism's proprietary, suffocating bottle. It is time to put this message inside a transparent glass sleeve — not of capitalism, but of cooperation — and float it forth on the waters of the world. The hope is that the bottle may be found by someone, its message discovered, and that a rescue effort will be mounted. An effort to protect and propagate this nutritionally- and agronomically-valuable class of "lost art."

Note

Any resemblance to real persons, living or dead, is purely coincidental.

"Go With a Winner!"
The Seed Learning Center
Snapshot of a Graduation Ceremony
By Justin Lieber

Big Sur, California.

Just the journey here in a visitor's car was — to use the psychedelic parlance of the Sixties — "a trip." The thunder and lightning have now cleared from the ridges, but insistent, isolated squalls of rain continue to sweep across famous Highway One, the large droplets hammering on the windshield and roof of a visitor's car. *"It was night before we arrived, and every mile of the forty had been enchanted,"* poeticized Big Sur's literary light, Robinson Jeffers in a vignette describing this same stretch of road. *"The coast had displayed all its magic for us,"* he wrote, *". . . drifts of silver rain through great gorges, clouds dragging on the summits, storm on the rock shore, sacred calm under the redwoods."*

Mrs. Jeffers too, used evocative and picturesque language to describe the landscape that she and her husband would choose as their home ground, their personal "bioregion."

"The mountains hurry to the sea in great precipices, slashed by canyons, only seldom flattening to a few acres of possible plowland. Canyons, gushing springs and streams, are thickly wooded with redwoods and pines, laurels, tan-oaks, maples and sycamores, and, high up, the rosy-barked madrones. Many a stout ship has broken up along this terrible shore, which mile after mile is jagged with sharp cliffs and narrow inlets with only an occasional furlong of white-sanded beach, inaccessible from above. Lashing waves roll in,

incredibly green and blue beyond the foam, menacing and gray in storm. Color, color on land and sea, green and tawny yellows, and the millefleurs tapestry. Even on sunny days there will be a vagrant wisp of luminous fog, creeping like a live thing in and out of the canyons."

And here, high up in the Big Sur mountains on the campus of the Shannon O'Connell Seed Sanctuary, it is nearly impossible to remain untouched by the regenerative powers of Nature; those forces which renew and invigorate life. This campus — headquarters of The Kusa Seed Society and its school, The Seed Learning Center — sits tidily on large sweeping meadowlands, its buildings and fields surrounded by dense forest.

Reachable by a tortuous, lengthy, narrow mountain road — nearly impassable in storms and inclement weather — the Seed Sanctuary with its neatly kept buildings and grounds, is nestled in the highlands towering above the drainages of Palo Colorado Canyon, in the northern reaches of coastal California's Big Sur district.

The administrative and financial parent of The Seed Learning Center — The Kusa Seed Research Foundation — was founded in 1980 and is today perhaps the only organization of its kind in the world. A seed born from a blossoming of values which flowered in the 1960's counterculture, the motto of this seed-keeping, mini-farming organization is: "Work for the Future, Being Done Today." And here, evident before a visitor's eyes, work *is* being done. Plow oxen stand quietly in their holdings at the moment, but the manicured fields testify to their labors. The central philosophical and practical focus of this campus is mini-farm production of seed for human foodgrains.

No mainstream electrical grid impacts the Seed Sanctuary, and its water supply, pure and effervescent, is delivered directly by gravity flow from the wilderness, completely without pressure pumps of any kind.

A map of the campus and a guided tour for guests, familiarize a visitor with the facilities available at The Seed Learning Center. Amidst superlative and majestic natural beauty stand a Main Library and a Study Center (the latter building holding classrooms), and a large and well-equipped Dining Hall with an expansive Teaching Kitchen. There are individual cabins and duplex residential structures, barns and seed-handling buildings, even a well-equipped emergency Fire Department (all students and faculty receive training enabling them to serve as Volunteer F.D. members, able to mobilize for a emergency).

Sitting down with a visitor for an interview, Lorenz K. Schaller, 66, a tall reed of a man with a trim build and gray hair, identified himself as the founder of The Kusa Seed Research Foundation. Inspired by the advanced degrees available in the surrounding society in numerous specific disciplines — M.S. and Ph.D. programs in particular, Mr. Schaller said, the Kusa Seed organization decided in 2009 to construct a degree certificate course entitled Mastery of Seed Arts and Human Foodgrains; a practical program focused directly on the planet's edible seedcrops. Mr. Schaller said that the dream of The Seed Learning Center and the vision of its capacity to host 30 students per session, had existed from the very founding of the Kusa Seed organization, but arduous decades passed by before the school became a reality.

Going With a Winner

In the worldview of the Kusa Seed organization, explained Mr. Schaller to this reporter, competition is not prized. It is in fact, an activity intentionally de-emphasized. In the seed organization's worldview, 'winning' is thought of differently from its normal competitive sense, he said. ALL the students on this campus are "winners," Mr. Schaller opined. The seed organization actually eschews competition Mr. Schaller said. It operates instead with an internal perspective on winning as something comely, attractive, and inviting. "In a single word, 'winsome'," said the founder, his face bearing an enigmatic smile. (This reporter felt himself swimming against unfamiliar currents, perhaps like an inexperienced neophyte learning the basics of Marxist catechism for the first time. Sensing this reporter's discomfort, Mr. Schaller paused. "Beauty," he said — "that's our focus here; beauty and unity, achieved through creativity: creative strength, like that exhibited by plants").

The fact is, however — human nature being what it is — that when it comes to supporting projects, people want "to go with a winner," explained Mr. Schaller to this visitor. (He was referring to that practical aspect within human nature whereby people are attracted to support a project that outwardly appears successful; something that wears obvious external trappings of worldly success). To combine this fact of life and the goal of drawing attention to the successful accomplishments of the Kusa Seed organization, a fresh publicity campaign was conceived and launched, Mr. Schaller explained. The campaign depicts the seed organization as steward of a "veritable treasure chest." In this case though, explained the founder, the "treasure" is in the public domain and the public can get its hands directly on the riches (the non-proprietary, living seeds).

Seeds, Knowledge, and Talent

A short campaign video shown to a visitor emphasized three main publicity points. The first message delivered, emphasized the richness of the botanical source material; the biological value and wealth of the seed collection being curated. The second message highlighted the knowledge-base assembled by the seed organization; its assembly of scientific, historical, folk, agronomic, and nutritional knowledges. The third message delivered by the video emphasized talent; the seed organization's interpretative abilities and passion for education in the specific areas of mini-farming and seedcraft skills. The video's punch line delivered the fiat that here, with the Kusa Seed organization, there exists a "Treasure Chest" brimming with an exciting, winning-combination of seeds, knowledge, and talent.

In conversation with a visitor, Mr. Schaller explained that students at the Seed Learning Center can select a major from such subjects as mini-farm crop production, seed-keeping arts and sciences, or artisanal food-processing/grain-nutrition. Course material covers technical science and art. Students major in one advanced specialty while gaining exposure to as much of the remaining curriculae as time and circumstances permit.

Students attend a total of forty-five minimum individual class hours on campus at the Seed Learning Center and must maintain passing grades to retain residency. During the summer season, each student participates in a self-selected mini-farming fieldwork program consistent with her or his major area of emphasis and relevant to the portion for which she or he is preparing her/him self. The on-campus residency is preceded by a strictly-graded 70 hours of distance learning, conducted on-line via the Internet. According to Mr. Schaller, the on-line material is delivered via a Web-based university-style medium.

The distance-learning portion of the course he said, is entitled "universal studies," with all students studying the same material. The 70 hours of distance-learning are broken down into individual modules ranging from 2 to 14 hours each. The intent of the universal studies is to "cover all the bases," so that each student arrives at residency informed with background knowledge in the area of biodiverse, ecologically-produced, naturally-prepared, human foodgrains.

The distance learning portion of the course includes an educational emphasis on electro-magnetic fields (EMFs) and their human health effects. Students study this subject in depth, learning the importance of creating and establishing a health-safe electro-magnetic environment for crop production, food processing, and human daily living. The end goal is to insure that all seeds, grains, and foods are grown, handled, prepared and stored in a EMF health-safe manner. In the distance-learning portion of the course, students also study seed germination and vigor testing procedures, as well as proper storage materials and techniques for long-range seed preservation. These and other distance-learning subjects (such as types of cooking fire and their effects on human well-being; culinary salt, good and bad; and grain-cleaning/stone-proofing), are considered basic necessities to prepare the student for the residency portion of the course, Mr. Schaller said.

Only those students who obtain a passing grade in the distance component have the opportunity to advance to the residency portion of the program. Residency candidates are screened, with candidates chosen on aptitude and alignment with the guiding philosophy of the Kusa Seed organization and its mission.

Course fees cover tuition, laboratory fees, books, special instruction, materials, field-trip transportation, meals, and lodging. Signed

contracts and payment need to be received by The Seed Learning Center five weeks prior to the course start date. According to descriptive material provided to a visitor, the objective of the course is to instill in each student basic competency in the small-scale propagation and utilization of human foodgrains. Emphasis is on human utilization of edible seedcrops in a health-safe, ecologic manner, from field to table.

All students earning the Mastery of Seed Arts and Human Foodgrains certificate, must write-up a synopsis paper discussing personal findings and experiences in their selected advanced specialty study area. The paper must be written to standards and be accepted. This paper is preserved in The Seed Learning Center library and becomes part of a Catalog of Course Work which all current and prospective students have access to.

According to Mr. Schaller, graduates of The Seed Learning Center have acquired an informed, "inside view"; a timeless ecological perspective on health-safe human foodgrain production, processing, and utilization. The entire Seed Learning Center program is designed to be environment-positive. No artificial chemicals are employed, neither in the fields nor in any stage of food processing. The emphasis is on hands-on competency and expertise in a "natural way" approach to human foodgrain and edible seedcrops. According to Mr. Schaller, graduates acquire the ability to make a personal difference in processes which are able to feed families with nutritious, ever-renewable, ecologically-produced, quality-protein plant-foods.

Commencement

To file the report you are reading, this reporter attended Commencement, held on November 28th at the Seed Sanctuary's Judith M. Miller threshing ground. This reporter — one of about 150 people attending — witnessed 32 young graduates, 18 women and 14 men, receiving their diplomas from The Kusa Seed Learning Center on its beautiful campus and in the context of a moving ceremony. The students' graduation was the fruit of their year and a half of study and hard work towards becoming degree-certified Seed Arts and Human Foodgrain specialists. Graduation was also an emotional occasion, the conclusion of the students' six-month residency on the mini-farming and Seed Sanctuary campus.

In his role as director emeritus of The Seed Learning Center, Mr. Schaller addressed the audience, stating that completing the coursework was an arduous task for the students but will ultimately be remembered as one of the formative experiences of their adult lives. "A seed has been planted in you," he told the graduates, with a wide grin. "Your spiritual and material growth as adults now has specific direction and purpose. In taking this path, I personally am confident that you have chosen well," he told the graduates. "Finishing The Seed Learning Center course is merely the beginning of a promising lifelong opportunity," said Mr. Schaller. Master of Seed Arts is a promise to the world-at-large that here is a long-needed common-sense approach to the planet's most important renewable human food resource, he said. With their valuable completed studies, these students are genuine pioneers, he told the assembled group. In his view, he said, these students have enriched The Seed Learning Center with their work. "According to the following testimony, recently provided by an Italian wheat scientist," advised Mr. Schaller, "these students have plowed new ground."

"As ancient types of wheat were hybridized into modern varieties, they were bred for higher yield. Higher yields are detrimental to the quality because when you improve the yield, you lose nutritional values, including iron, carotenoids, vitamin E, microelements and proteins. Ancient grains are less hybridized and therefore retain more nutrients and proteins."

In his address, Mr. Schaller referred to the Greek mythological hero Triptolemus, telling the audience that 32 graduates, fully trained in the arts and science of seeds, were now well-prepared to go out into the world to spread their knowledge of vital edible seedcrops far and wide, "like Triptolemus of old." This vital knowledge, Mr. Schaller said, is stable across time; its relevance will continue for thousands and thousands of years; as long as human life "as we know it persists," the speaker said. The knowledge is both durable and eminently valuable, he averred. Make no mistake, he insisted, it is vital and timely information for enduring human well-being and health.

Mr. Schaller explained his hope that as a newly-launched educational facility, this year's individual student projects at The Seed Learning Center will be transformed into courses that can be repeated, year after year. He repeatedly emphasized the fact that the foodgrains involved are staple foods and are timeless. "We further hope," he continued, "that in the future, one or more members of this year's graduating class will return to The Seed Learning Center as faculty, to impart their knowledge and wisdom to incoming students in subsequent years." Mr. Schaller then turned the podium over to the keynote speaker — the world's leading scholar of soyfoods — Mr. William Shurtleff, Director of the Soy Info Center, located in Lafayette, California.

Mr. Shurtleff began his keynote speech with the observation that The Seed Learning Center degree amounts to "a certificate of awareness

about the need to face and carry forward new responsibilities in human affairs and in food. The degree is just the beginning of an enterprise that can bear practical and long-lasting results," Mr. Shurtleff said.

Good Seed

Mr. Shurtleff urged the graduates to go out into the world and align themselves with good seed. "Good seed," Mr. Shurtleff said, "means taking — and being a representative of — an ethical and moral stance on the planet's edible seedcrops. These substances, vital to the ongoing health and well-being of the human community should be outlawed worldwide as industrial-scale animal and aqua feedstuffs." He challenged the graduates to involve themselves not only in production activities, but to undertake moral and ethical initiatives as well. "Teach others," he counseled the graduates, "in the same manner that this Seed Learning Center has inspired and informed you. Be responsible to future generations."

In his address, Mr. Shurtleff observed that for the first time in history, humanity has mastered the production side of foodgrains. In the modern world, he said, technological, highly-efficient agricultural systems capable of prodigious production of cereal grains, grain-legumes, and nutritious oilseeds, are now widely established and proven. Never before, he observed, has humanity reached this pinnacle; the overcoming of the threat of insufficient food. Today's tools, techniques, and knowledge are truly the final, ultimate solution, he said, capable of forever eradicating hunger and malnutrition worldwide. There simply is no question about it he testified. Decades of solid proof stand as witness before humankind, he told the assembly.

Yet, said Mr. Shurtleff, despite this modern-day agronomic achievement and triumph, millions of the world's citizens daily endure hunger and malnutrition. Why is this? He poignantly asked the audience. There are several answers, he replied. Essentially, he observed, the explanations all boil down to ethical and moral issues. They all illuminate an essential individual moral failure to see the world in terms large enough; to embrace all members in a community of diverse equals. The shadow-side of our masterful foodgrain production technology is this colossal failure, a failure grounded in moral and ethical decline. Our failure is without question a moral and ethical failure, Mr. Shurtleff said. "We are willing parties," the speaker insisted. "As members of the industrial democracies, we are sustaining a tragedy of immense, epic proportions. That tragedy is the feeding of animals and fish and other aquatic species on an epic scale with what were originally, exclusively *human* foodgrains: soy, rice, maize, barley, wheat, and so on, and so forth."

More than 98-percent of the annual world soybean crop is today utilized as animal feed, along with nearly half of the world's production of wheat, humanity's historical "Staff of Life," Mr. Shurtleff told the group. Vast tonnages of the remaining cereal grains, grain-legumes and oilseeds share the same fate. Faced with this immense tragedy, what should we do? "What should we who care, who aspire to see the world in larger terms, do?" the speaker asked the audience. "How should we respond?" he asked.

One way, he said, is to simply ignore the problem. "Impossible to solve," he mimed. "Way too large." This response could be called the way of the status quo, Mr. Shurtleff said. Another way is the perception that despite the scale and gravity of this tragedy, it is a course of social conduct that can be changed. "We are a human community guided by laws," observed the speaker. Rules and regulations serve worldwide as a hand on the tiller to guide

humanity's common direction. "Personally," said the speaker, "I believe that a reasonable human response to this problem — this immense challenge — lies in a global campaign similar in scale and urgency to the campaign for nuclear disarmament."

Good people have to raise their voices in unison and say, "Enough!" Mr. Shurtleff said. He furthered this theme by explaining that a push for enlightened legislation of a global, borderless character, similar to the push for international human rights and global nuclear-weapon disarmament is required. Humanity needs to draft, install, and enforce statutes that prohibit the industrial use of the time-honored human foodgrains, including grain-legumes and oilseeds, as animal feedstocks worldwide, he said.

"Will such a campaign be easy?" The speaker asked. It will not, he replied. It will undoubtedly require many years of difficult effort. But, that is only more reason to not delay; to start the effort today, Mr. Shurtleff said. For millennia the edible seedcrops have been held in esteem by humanity and have been accorded a sacred respect, he observed. The loss of that respect has plunged us into our current dilemma, the speaker told the audience.

"I personally want to thank each graduate present here today for your significant individual accomplishments," Mr. Shurtleff said. Today's ceremony marks the crossing of a threshold, he said, winding-up his remarks. On one side is a thoughtless disrespect for Nature, a violation of her ecological order, and a wasteful squandering of natural resources. It is exactly this framework that supports the conversion of foodgrains into feedstocks, stated the speaker.

On the other side of the divide, observed Mr. Shurtleff, stands "a new framework" with ancient roots; a moral and ethical framework which identifies foodgrains as sacred substances governed by community

decree against unethical and morally careless applications. "I urge all persons present here to give serious consideration to these matters and to find ways to make small personal contributions to this urgently-needed, official moral framework for grains," he concluded.

The keynote presentation culminated with the presentation of the Herman and Cornelia Aihara Award, honoring a project selected by the students and faculty as "most pioneering and forward-looking." This year's award was given jointly to Lillian Wang and Harold Smith in recognition of their joint projects: placing identity-preserved seed into legal public-domain status.

Thanking Mr. Shurtleff for his keynote speech, the director emeritus retook the podium and gave the assembled audience a brief overview and summary of The Seed Learning Center Program. As a requirement for graduation, Mr. Schaller explained, each student is required to present a 'short course' in their area of specialization, open to all other students. Further, each student is required to commit to a 12-month period of distance-mentoring to any fellow student that pursues personal involvement in that specialty. The idea here is cross-fertilization, to make it possible for as many students as possible to gain expertise in as many aspects of seed and foodgrain as their interests and energy permit, he said.

Ms. Shannon O'Connell, whose philanthropic generosity made the Sanctuary a physical reality, was honored by the students with a set of hand-made straw weavings (also called "corn dollies") and ornamental brooms, their brightly-colored stems dyed with health-safe natural dyes. "This is a great honor," Ms. O'Connell said. "I will treasure these as objects made from natural materials with love and care. It's all about giving back. We have come on this day to celebrate, to congratulate, and to affirm the accomplishments of 32 graduates who have successfully matriculated a specialized course of

study focused on the edible seedcrops of planet Earth," said Ms. O'Connell. Added Mr. Schaller, "Miss O'Connell and I are deeply pleased with these students and with what they have accomplished. Truly, they have 'plowed new ground'," he repeated.

As Estella Ravelle, the head of the school, called each student to the front to receive their diploma, their name and specialized course of study were announced. With a warm handshake from the director and a hug from Ms. O'Connell, a few personal words were exchanged as the director congratulated each student for a "job well done." In turn, some of the students took the opportunity to make a few brief remarks.

Seed Sanctuary student certificates register mastery of the following curriculae items.

Roster of graduates

(In alphabetic order by surname)

Ms. Susan Andrews

Degree Certificate: The Maize Heat/Alkali Reaction

History and scientific importance (nutritional consequences) of the maize heat/alkali reaction. Related ash-cooking techniques. Wet-milling of reacted maize on a home and community-scale, equipment and technique. Community-scale production of Mayo Tosabatchi (*Zea mays*), a flour corn originally from the indigenous inhabitants of Sinaloa State, Mexico. Its soft white kernels have unusual culinary properties. Flour from the grain can be made into delicious cookies and cakes. How to propagate, utilize, and preserve pure seed of this landrace maize. Summary report containing 17 complete delicious recipes for cookies, cakes, and similar celebratory foods, containing no animal foods, dairy, sugar, honey, or concentrated refined sweeteners. (Perfected, "to die for" vegan dessert dishes. Sole ingredients: Mayo Tosabatchi, water, plant ashes).

Mr. Karl Appelford

Degree Certificate: Glutinous Heirloom (Landrace) Maize Strains: Production and Utilization

High-ratio amylopectin starch ("glutinous trait") has a high-digestibility, high caloric bioavailability. The result: richly nutritious foods of plant-origin and high nutritional-rank, featuring quality

protein. This project successfully generated grain under mini-farm conditions and transformed that grain into malt-sweetened non-alcoholic foodstuffs (ingredients: maize and water only). Additional food products tested and perfected: steamed cakes, steamed buns and dumplings. The end-products include excellent weaning foods and general purpose foods, strengthening for laborers and physical workers. Certificate Report in three parts: Farming guidelines (7 pages) and Catalog of Strains (3 pages). Recipes and Kitchen Instructions (9 pages).

Ms. Joyce Chen

Degree Certificate: Dyeing

The following quoted material is excerpted from Chen's Introduction: "The colorful natural pigments readily and easily available in the plant-parts of numerous edible seedcrops offer a rich and vibrant, underexplored and underutilized painter's palette for human creativity. These dyes, available in brilliant shades, offer GRAS status ('Generally Recognized As Safe' by USDA), colorfastness (for laundry purposes) and superb ultra-violet durability (resistance to sunlight fading). These natural pigments can be used for coloring cosmetics, medicinal syrups, food-supplements, as well as foods." Manual contents: Raising the dye crops. Extracting the dyes. Storage of extracted dyes. Color applications with recipes and formulas. Sample projects: Fabrics (shoulder bags, neck-warmers, scarves); Foods (colorful children's desserts including ginger-bread man with colored toes and hair). 94-page Manual, including a 19-page color-chart Appendix naming and organizing the colors. (Includes a CD master-file with the color-chart digitized).

Ms. Alice Christian

Degree Certificate: Home-Grown Mini-Farm Oilseed Crops & Chickpea Snack Production

Assay of a world chickpea collection for biodiversity. Home and community-scale production of deep-fried chickpea snack items using fresh, locally-grown cooking oil as per process detailed in the project completed by Ralph Feldser. Summary paper: 33-pages.

Ms. Sarah Copallo

Degree certificate: Lentil

Lentil history and archaeology. Culinary types of lentil. Mini-farm production of lentils using non-chemical, eco-agricultural production techniques. 103-page Certificate dissertation.

Ms. Charity Daniels

Degree Certificate: T'ef. An Ancient Foodgrain Staple. How to Grow it and Why

T'ef (*Eragrostis tef*). How to grow it and why. Description of bio-types and survey of traditional reputation of bio-types in Ethiopia. Millet whiskies (spirits). Production and description. Thomas Justice, collaborator on spirits. Certificate final report, 29-pages.

Ms. Regina Dinness

Degree Certificate: The Fruit-Trait in Cereal Crops. Discovery and report on a new Trait

The "fruity" (blackberry scent, coloration, and taste) in cereal crops. A previously unreported, culinarily and nutritionally-valuable exotic and rare foodgrain trait. Description and strain identity. Legal process to register strains in the public domain ("open source") permanently. A collaboration with Lillian Wang and Harold Smith. Thesis paper: 103 pages.

Ms. Alexei Duvette

Degree Certificate: Spelt Wheat Identification at the Chromosome Level. Chromosome Paintings of Spelt Wheat (*Triticum spelta* Linn.)

Strains of spelt wheat can exchange genetic material with (common) bread wheat (*Triticum vulgare* Linn.) and vice versa. Accordingly, many strains of "spelt wheat" in current circulation are not pure; not true spelt. Using staining and a digital microscope, paintings of genetically-pure spelt wheat chromosomes were produced to serve as a visual "base type" in assaying the ploidy status of individual strains and thus authenticating (or denying) the purity of spelt wheat strains. Acrylic on canvas. 19 individual panels, 30" x 45" with preservation (archiving) on digital medium.

Ms. Yasmeen El Fayee

Degree Certificate: Artisanal Manufacturing of Couscous and Bulgur

What is Couscous? What is Bulgur? (Description of these traditional grain staples along with their history and nutrient profiles). Making these products on a home and community-scale using ancient wheats and foodgrain barley (*Hordeum vulgare* var. *nudum*). The problem of rancidity in couscous. What is rancidity?

Examination of oxidation products: "toxic aldehydes." How to manage couscous freshness and prevent rancidity. How to make quality bulgur from heirloom, landrace wheats. Final Report with 119 pages.

Mr. Carl Esser

Degree Certificate: Glass Ampule Seed Storage

A "World Crop Collection" stored in a briefcase. Materials and methods. Sealing freshly harvested seeds in small glass ampules offers a "best method" approach to long-term seed preservation. A large number of accessions can be fitted into a tiny cubic area, thus allowing a "world collection" of a crop to be stored in a single briefcase (the case is then submitted to sub-freezing storage). Materials and methods, 13 pages.

Mr. Ralph Feldser

Degree Certificate: Home-Grown Mini-Farm Oilseed Crops & Yuba Production

Yuba production (deep-fried soy product). Why it's important. Home-grown mini-farm oil-seed crops; how to grow them and process them into cooking oil with simple tools. Yuba production on a cottage and community scale. Summary paper, 34 pages.

Mr. Tobias Gansser

Degree Certificate: Bird Control in Ripening Grain Crops

Methods and materials. Some Failures and Some Successes. Control of bird predation in ripening edible seedcrops is a critical necessity. This project presents a historical review of the literature on bird-control and examines all the available ecologically-viable control approaches. Tests, trials, and results. Final Report, 48 pages.

Ms. Mary Goodsby

Degree Certificate: Dryfarming of Cereals: What it is, Why to do it

Review of world-wide dry-farming (non-irrigated cereal production). Historical techniques and their function and effects. Nutritional effects on the grain produced. Dry-farming of einkorn wheat. Examination of trials of 79 strains of heirloom einkorn wheat (*Triticum monococcum*) at 17 different austerity sites. Thesis paper, 113 pages.

Mr. Bo Haesung

Degree Certificate: Scented-Trait Grain Sorghums

The grain-sorghum perfume trait; what it is. Mini-farming the crop: production techniques and results for six heirloom ("landrace") folk strains of scented grain sorghum. Art and architectural use of the stalk material (7 sample projects). 22 creative whole-grain food dishes. Comprehensive handbook, 77 pages.

Mr. Amos Helterdoff

Degree Certificate: Buckwheat Production and Utilization

This project explored Tartary Buckwheat (*Fagopyrum tataricum* [Linn.] Gaertn.). The protein is of excellent quality, the grains have 50-percent more B-vitamins than wheat, plus they contain the important vitamin-P which contains the valuable flavonoid rutin, "known to keep the capillaries and arteries strong and flexible." This project documented successful methods of mini-farm production of the grain, dehulling for food use, and home and community scale utilization of the produced grain. Farming Guidelines (15 pages) and a Recipe Handbook (16 pages) were produced.

Mr. Thomas Justice

Degree certificate: Millets: Medicinal Alcohol

Degree certificate: Production of medicinal distilled spirits from millet grain. Millet production agronomy, artisanal fermentation and distillation, bottling and storage. Medicinal applications: physical, mental, psychic. A collaborative project with Charity Daniels. Dissertation for Certificate, 76 pages.

Mr. Allen Knights

Degree Certificate: Small-Batch Tamari/Shoyu Production from Heirloom Crops

Household and community-scale tamari (shoyu) production. 6 biodiverse varieties of tamari from heirloom crop strains with shop plans/equipment lists and detailed recipes.

Ms. Helen Lerner

Degree Certificate: Millet Candy Production

Candy production using glutinous-strain bread millet (*Panicum miliaceum*), foxtail millet (*Setaria italica*) and Japanese Barnyard Millet (*Echinochloa frumentacea*). Growing the crop. Cleaning the grain. Dehusking. Conversion of starch to natural complex sugars. Home and community scale manufacture of syrup, candy "kisses" (taffy), and trail bars (six flavors). 11 Complete detailed recipes with all procedures detailed. No added sweeteners. Handbook with recipes, 136 pages.

Ms. Ellen Lesterfield

Degree Certificate: Glutinous-Trait Food Barley

The goal of this project was to identify public domain, non-proprietary, glutinous-trait food barleys (*Hordeum vulgare* var *nudum*) of folk-origin (i.e. "landraces"). Seven strains were identified, produced under mini-farm conditions, and brought to utilization (recipes and procedures are detailed in written form). Glutinous-trait cereals are rich in amylopectin starch, a type of starch that is highly

bioavailable and nutritious. Among many food products, these grains are suited to the production of sweet, thick-bodied, non-alcoholic beverages with a natural almond flavor. Finally, the strains employed were bio-identified (DNA fingerprinted) and registered in the public domain (collaborative project with Lillian Wang and Harold Smith). Final Report, 114 pages.

Ms. Elizabeth Lin

Degree certificate: Naked-Grain Trait in Oats

The naked-trait in oats (*Avena sativa* var *nudum*) is a high-value trait for human foodgrain applications. The importance of this trait is little-understood (or not understood at all) by organic producers and commercially available seed is of very poor culinary-grade quality. The basic problem is that a ripe oat panicle (seedhead) can bear *both* naked and covered grains (on the *same* panicle). Expert folk-level farmers knew of this obstacle and selected and maintained strains that were purely naked, with panicles containing zero covered-type kernels (hulled grains). This project set-out to locate and identify such strains and document how to maintain them under mini-farm production conditions. (Summary: The naked-grain trait in oats. Its culinary importance. How to identify its presence/absence. How to breed/select oats for excellence of naked-trait, and how to maintain [stabilize] the trait for whole-grain mini-farm production of unrefined, whole-grain culinary oats). Illustrated manual, 164 pages.

Ms. Alys Minck

Degree Certificate: Tempeh Production from Food-Barley

This project focused on transformation of food-barley (*Hordeum vulgare* var. *nudum*) into tempeh. Hand dehusking procedure with sun-drying (health-safe bio-magnetics) and the fermentation process are each individually detailed. Home and village scale, health-safe fermentation chamber construction, thermostat technicalities, and spore collection and preservation. Vitamin B-12 assay techniques and establishment of a positive vitamin B-12, food-barley, tempeh production process. Manual with 41 pages: "Delicious, Fresh, Whole-Grain Barley Tempeh."

Ms. Linda Nelson

Degree Certificate: Culinary Preparations from Emmer Wheat

The emmer family of wheat (*Triticum dicoccum*) divides into three streams of plant-types. Each plant-type has its own class of kernels. The three classes are: vitreous; semi-vitreous; and non-vitreous (hard; semi-hard; and soft). This project ("Ancient Staples Examined for Modern Times") examines these important differences, explaining plant-type causal-factors (agroclimatic, genetic, etc.) and the respective inherent culinary suitabilities of each class (viz. bread, porridge, pasta, etc). As these facts are not at all appreciated among the interested public at the present time, this information is

considered of merit. Home and community-scale pasta (and porridge) production using emmer wheat (*Triticum dicoccum*). Mini-farm crop production. Dehusking of the grains. Flour milling. Home and community-scale pasta production. 13 different pasta types. 4 different porridge types. Ancient staples described and detailed for modern times. Dissertation for Certificate: 62 pages with Bibliography. (Project collaboration with Yasmeen El Fayee and Oscar Solis).

Mr. Jeffrey Peters

Degree Certificate: Seitan from Einkorn Wheat. Is it Possible?

Seitan ("wheat meat") manufacture on a household and community scale. From field to table using ancient wheat ancestor crops (einkorn, emmer, spelt, primitive wheats [*Triticum boeoticum*; *T. kotschyi*; *T. urartu*; *T. timopheevi*; *T. zhukovskyi*]). Results and guidelines. Einkorn wheat (*Triticum monococcum*) is one of the earliest ("most primitive") wheats, an ancestor of today's "bread wheat." (Einkorn wheat has also been called "stone age wheat"). This student degree project involved growing and testing 24 einkorn wheat strains to assay their suitability for making seitan ("wheat meat") on a home and community-scale. The results prove that this food product could conceivably have a history reaching back into antiquity and the prehistory period. Subtitle: "How Old is Seitan?" Collaborative project with Mary Goodsbey. Results and Guidelines: 66 pages.

Mr. Robert Rolls

Degree Certificate: Baking Technology: Artisan Handcraft, Including Oven-Building Using Adobe Technology

Plans for constructing a wood-fired bread oven. Recipes and procedures for producing home and community-scale Indian-style chapatti from Karan-series food-barley (*Hordeum vulgare* var *nudum* cv Karan-series). Also flatbreads and natural-leaven bread production from ancient landrace wheats. Plans and recipes, 37 pages.

Ms. Deborah Samuels

Degree Certificate: Glutinous Heirloom (Landrace) Food-Barley Strains: Production and Utilization

This project carefully examined winter growth-habit types, and kitchen work-up details including colored versions pigmented with food-safe natural dyes of plant-origin (rated by FDA as GRAS). Scale: home and community scale. Evaluation and Performance: screening results of 7 landraces. Testing for tsampa, tea, whole-grain bread. Dye collaboration with Joyce Chen. Agronomic collaboration with Ellen Lesterfield. Dissertation for Certificate: 62 pages.

Ms. Christine Sinseimer

Degree Certificate: Job's Tears (*Coix frumentacea*). A Cereal Grass for Food, Medicine, and Ornament

Mini-farm scale Crop-Production Manual (118 pages, illustrated). Includes a Bibliography with 67 citations covering the following topics: Japanese medicinal research on the anodyne properties of the grain and its use as an antidotal food substance for intestinal cancer patients (a literature review). Foodgrain properties and history (a literature review). Ornamentation. Sample projects: Neck 'Pearls'; beaded blouse; beaded belt; beaded boots; beaded top-hat; tantalizing skirt. Digital photographs of completed ornamentation projects. Coloration collaboration with Joyce Chen.

Mr. Harold Smith

Degree Certificate: Legal Process: Entering Seed Lines in the Public Domain

(A Joint Project with Lillian Wang)

This project consists of the explication of a step-by-step process that can be executed by any citizen of the United States and its territories, to obtain public domain legal status for an individual seed line (seed accession). Introduction: A legal review of the "Open Source" legal landscape. How to anchor seed lines in the public domain using a step-by-step legal procedure. (Government filing fees are the only cost). Registration of a seed line in the public domain effectively raises a permanent legal barrier to its private ownership or marketplace use as a proprietary article. Joint project with Lillian Wang. (Mentoring provided gratis by faculty counselors at San Francisco State College of Law, Dean's Office and Spencer Davis Goldfine Wills, LLP). Guide to Procedures: 204 pages.

Mr. Oscar Solis

Degree Certificate: Dehusking

Design of a low-cost hand (and foot-pedal) powered home-scale dehusking apparatus for: paddy rice; covered wheats (einkorn, emmer, spelt) and millets (foxtail, bread). Plans and schematics, 17 pages.

Mr. William Spinner

Degree Certificate: Long-Term Seed-Storage Chamber

Construction of a small, closet-size glacial-temperature seed storage chamber. Construction plans and details for a walk-in chamber of 150 cubic feet for long-term seed storage/preservation. Operating energy from solar; pelton wheel, natural ice storage, and/or bio-gas produced on-farm. Plans: 71 pages.

Mr. Peter Topper

Degree Certificate: Small-Batch Miso Production from Heirloom Crops

Household and community-scale miso production. 12 biodiverse varieties of miso with agronomic and food-process instructions made from landrace strains of grain-legumes, naked-barley, upland rice, and native dwarf wheats. Final Report: 82 pages.

Ms. Carlotta Tunis

Degree Certificate: The Deep Bench of Amylopectin Starch in Foodgrain Millets. A Review and Report on Bread Millet (*Panicum miliaceum* Linn.); Japanese Barnyard Millet (*Echinochola frumentacea* [Roxb.] Link); Foxtail Millet (*Setaria italica* Beauv.)

Detailed studies of grain production on a mini-farm scale and the wonderful results obtained in the kitchen from these high-quality-protein foodgrains. A collaboration with Helen Lerner. Co-author with Helen Lerner.

Ms. Lillian Wang

Degree Certificate: DNA "Fingerprinting" of Heirloom Cereal Strains

(A Joint Project with Harold Smith)

Development and practice of a state-of-the-art, "rapid-run" molecular genetic screening technique. This technique yields precision DNA typing / fingerprinting identification down to the single-strain level (an identity portrait of an individual seed line). The resulting one-of-a-kind unique fingerprint is viewable in visual format and storable in digital format. Practice of the technique requires only a modest level of skill (typists can thus easily be trained; less than 40 hours of training); has a very low-cost per assay (cents per sample); and all necessary technical supplies are common and readily available. The technique makes it possible to confer a permanent, scientifically-valid, precision-identity upon a specific cereal, grain-legume, oilseed, or other edible seedcrop accession, an identity which will stand in a court of law, as backed by contemporary case-law. Individual DNA identity (also called "DNA bar coding") is vital for submitting individual plant strains into public domain status with legally defensible standing and status. Guide to Procedures: co-author with Harold Smith.

Ms. Judy Young

Degree Certificate: Malting

Home and village-scale malting of food-barley (*Hordeum vulgare* var. *nudum*) for non-alcoholic food and beverage products, including weaning foods for young children. Home and village-scale malting of dragon's claw millet (*Eleusine coracana*) for non-alcoholic food and beverage products, including weaning foods for young children. Detailed instructions, 71 pages.

Glossary

Aihara, Herman and Cornelia

The Aihara's (husband and wife), Herman (1920-1998) and Cornelia (1926-2006) lived in the United States (chiefly California) and taught health and nutrition via natural foods for 3-4 active decades. They oversaw the publishing of a magazine and books and operated the George Ohsawa Macrobiotic Foundation and the Vega Institute. Originally from Japan, their work in the West was inspired by the Japanese Buddhist philosopher George Ohsawa, for whom they were emissaries.

amylopectin starch

A type of starch configured by long-branch chains which is highly assimilable to human digestion. A rare trait which appears in cereal crops (example: glutinous or "sweet" rice) and possesses unique culinary properties and is highly nutritious (a premium food for nursing mothers).

chickpeas

A low-height grain-legume (close cousin: the garbanzo bean) with nutritious, tasty seeds. Flavor is described as "*full-bodied, nutty and rich, reminiscent of chestnuts*" (Onstad, p 308).

glutinous starch

See "amylopectin starch"

Job's tears

Coix lachryma. A cereal grass botanically related to maize, which divides into two main streams: (1) a plant-type which bears hard, inedible seeds used as beads in ornament and (2) a plant-type that bears soft edible kernels (enclosed inside a hard, protective outer shell) which are highly nutritious.

kusa

A word from ancient India which eventually (over time) became attached to one or more species of grass utilized in ritual and ceremony. The grass figures prominently in the oldest strata of Indian mythology as "sacred grass."

The Kusa Seed Society

A United States non-profit organization established in California in 1980 to "further the knowledge and understanding" of ancient cereal grasses and other edible seedcrops. Focus is on distribution of seed (for planting) and literature and the promotion of small-scale self-culture of edible seedcrops (mini-farming).

naked oats

A special (less common; rare) type of oat whose kernel is "naked," i.e. free of attached inedible fibrous husks. Naked oats are the premium human whole-food oat — a little-known, little-used staple food of immense nutritional and culinary power.

oats

See "naked oats"

seitan

(Pronounced: "say-tan"). "Wheat meat." A very chewy, meat-like textured food article prepared by washing high-gluten wheat flour to concentrate the gluten-containing starch fraction. A unique and famous plant-food of the modern natural-food scene.

t'ef

The Ethiopian staple-food cereal grass, prominent in the high-altitude villages out of which some of the world's top competitive long-distance runners have emerged in modern times (including women athletes). Flour milled from the tiny seeds is used to make large-size, circular fermented pancakes and other staple foods.

tempeh

A nutritious ferment food made by culturing microorganisms on specially prepared seeds of cereals or grain legumes. The seeds become bound together by the fragrant delicious white mycelial threads of *Rhizopus oligosporus*.

Triptolemus

Heroic figure of Greek myth, he drove a chariot pulled by dragons to distribute seeds and guidance for cerealian mini-farming, worldwide. His name means "thrice-plowed field" referring to the requisite three tillage passes necessary to create a seedbed.

yuba

"Yuba is made from the skins formed on hot soy bean milk, layered and pressed into slabs or cakes, and eaten as a meat substitute. These make an unusual addition to braised vegetables" (-Onstad, p 330).

Description of Big Sur by Una Jeffers (Mrs. Robinson Jeffers),
continued from pages 1-2.

"No longer gentle now, the mountains hurry to the sea in great precipices, slashed by canyons, only seldom flattening to a few acres of possible plowland. Canyons, gushing springs and streams, are thickly wooded with redwoods and pines, laurels, tan-oaks, maples and sycamores, and, high up, the rosy-barked madrones. Near the Little Sur River there are dunes, whose drifting sands defy any boundaries of the road. Beyond, the Point Sur lighthouse sits atop a rock like St. Michael's Mount off Cornwall. From three hundred and fifty feet above the sea the powerful lens and bellowing siren warn mariners that many a stout ship has broken up along this terrible shore, which mile after mile is jagged with sharp cliffs and narrow inlets with only an occasional furlong of white-sanded beach, inaccessible from above. Lashing waves roll in, incredibly green and blue beyond the foam, menacing and gray in storm. Color, color on land and sea, green and tawny yellows, and the millefleurs tapestry. Name the flowers to conjure up the colors — blues of wild lilac, lupin, larkspur and iris and blue-eyed grass; gold of poppies and yarrow and the yellow lupin, wild pansies and wall-flowers; and white heather, white wild lilac, candle-white yuccas, and sometimes snow-on-the-mountain. Flashing bird-wings too, red-winged blackbirds and golden finches, blue jays and hummingbirds, darting red and emerald. And high above, arrogant hawks hover, marsh hawks and sparrow hawks, redbills and peregrine falcons. Vultures too peering down, and a rare pair of eagles. Even on sunny days there will be a vagrant wisp of luminous fog, creeping like a live thing in and out of the canyons."

(from Karman)

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