MWSHS Student Newsletter

Autumn 2018

M.H. Graduate Profile: Bonnie Garoutte

"My journey," explained Bonnie Garoutte, a recent graduate of MWSHS' Master-Herbalist Diploma Program, "started with injury, caused largely by a poor diet, which led to a weakened skeletal condition. I sustained a back injury and could not walk at all for 3 months. I was prescribed pain-killers which, I believe, led to a damaged heart. Enter hero number one, Matthew Alfs, who quickly took care of business in that area. He said, and I will never forget: 'It may take a year. It may take two years. But you will get better.' Now, those are words that I use."

How did Bonnie's journey then progress? "Matthew Alfs' classes at Normandale College were offered and that's how I was introduced to this healing art," she explained. "Then, a friend with whom I worked, Jackie, and who I consider hero number two, said: 'You must go on to pursue the Master-Herbalist Diploma with MWSHS. I've got your back.' Here was an opportunity, I thought, to help myself and others out of disease and into health.

Enter my third hero, Vickie, who kept encouraging me along the way. Then, enter hero number four, Bette, who, when I was about to throw in the towel, told me: "'I won't let you do that!' "

Now, as a happy MWSHS graduate, Bonnie urges: "To the person thinking about studying with MWSHS, I would say: 'Don't delay! The life you save may be your own or that of a loved one.' "

As to her current and future endeavors in the herbal realm, Bonnie informs us: "I currently work at a health-food store. Here, I get a chance to talk with people about what herbs worked best for them. I am aspiring to be a naturalist, however, and am thinking of starting a program called 'Tea and Me' and working at a wildflower and bird sanctuary in my area where I recently finished attending several wild-plant walks. There are some nice old trees there and somehow that was comforting to me. When I was a little younger, I use to climb everything: buildings, trees, and fences. I most loved climbing trees. The naturalist there commented on my looking at a tree like I'd like to climb it—funny that she could see that. She also said it would be hard to climb. I told her I knew how I would climb it. Then, I reasoned, I probably couldn't anymore." *(Continued at the Bottom of Column Two)*

Mid-to-Late 2018 Graduates

We offer congratulations to the following mid-to-late 2018 graduates of the Master-Herbalist Diploma Program.

Bonnie Garoutte, MH (MWSHS)

Kylene Seres, MH (MWSHS)

We also offer congratulations to the following graduates of the Western-Herbalism Certificate Program:

Rachel Fitzgerald

Lucia More

We greatly look forward to hearing how these graduates will use the knowledge they have gained from their herbal studies in the months and years ahead.

The Lloyd Library & Museum in Cincinnati: A Haven for Herbal Researchers

One of the greatest repositories of herbal knowledge in the U.S. is the Lloyd Library and Museum in Cincinnati (website: https://lloydlibrary.org/), founded by the revered Eclectic pharmacist John Uri Lloyd and his two younger brothers, Curtis and Nelson. It houses many thousands of of books on herbalism, medical botany, pharmacy, regional flora, and related works, as well as hundreds of scholarly journals. It is open to the public and free of charge, but researchers are requested to make appointments so that rare books from the stacks may be retrieved ahead of time by library staff in that the stacks are not open to the public. (The library's website allows one to search its holdings ahead of time. See http://uclid.uc.edu/search~S8/X) If you are working on your thesis and will be in Cincinnati during this span of time, be sure to make an appointment to study at this amazing library.

M.H. Alumni Profile (*Continued from Column One)*

Bonnie shared this final thought with us: "Thanks to all of you at MWSHS for your work and kind thoughts. That is what I will be bringing with me: work and kindness."

Inside This Issue

2	**Workshop Credit Options--Nationwide**
3	**Herbal Adaptogens: What They Are & What They Do**
7	**The MWSHS Clinic (Midwest Herbs & Healing)**

WORKSHOP CREDIT OPTIONS

Except where noted, all of the below-listed events qualify as Workshop credits toward the Master-Herbalist program. Each hour of *verified* attendance (per instructor-completed workshop-credit slips as supplied by MWSHS) counts toward an equivalent hour of Workshop Category #3 credits (up to the student limit of 20 hours), unless another category is specified or unless one attends a particular workshop at one of these events that is *strictly* in one of these other categories.

Workshops, Conferences, Lectures, & Events in Herbal Studies across North America

Feb. 22rd-24th, 2019. *"Eighth Annual Florida Herbal Conference,"* Camp La LLanada, **Lake Wales, FL** Scads of workshops, including wild-plant walks, which qualify for Workshop Category #2 "Wild Plant Walks". For more info or to register, visit the website: www.floridaherbalconference.org.

March, 2019. "*Winter Tree Identification*," by Cynthia Lane, Ph.D, Savanna Moon Wildlife Sanctuary, **western WI** (between Lake City and Wabasha), $25-45 sliding scale. Per Dr. Lane's website description: "Learn how to identify 25+ native trees by winter characteristics like bark, buds and scent. Ever wonder how to tell oak from ash, or more importantly, ash from box elder, when cutting firewood in the winter? Do you know your trees well enough to find the oaks where hen of the woods mushrooms are found, elms where morels might grow, or medicinal trees in early spring? Learning trees in the dormant season is ideal for a couple reasons: tree bark and buds are easily visible, and once you learn tree identification in the winter, it will be a snap when leaves are on. Course will include a handout that describes bark, bud, form, habitat and other identification tips."www.savannamoon.org. This event qualifies for Workshop Category #2, Wild-plant Walks

March 22nd-24th, 2019. "*Deep South Herbal Conference*," Mt. Cheaha State Park, near **Delta, AL**. Organized by herbalist Darryl Patton, a student of the famous herbalist Tommie Bass. Scads of classes and also herbwalks (which latter qualify for Workshop Category #2, Wild-plant Walks). For more details, visit www.deepsouthconference.com.

March 29th-31st, 2019. *"Southwest Conference on Botanical Medicine for 2019,"* **Tempe, AZ.** Over 30 lectures plus field studies (which qualify for Workshop Category #2, Wild-plant Walks). For more info or to register, visit the website at www.botanicalmedicine.org.

May 31st-June 3rd, 2019. "*Medicines from the Earth Symposium,"* Blue Ridge Assembly in **Black Mountain, NC.** Over 30 lectures plus field studies (which qualify for Workshop Category #2, Wild-plant Walks). Scads of classes and also herbwalks (which latter qualify for Workshop Category #2, Wild-plant Walks). For more info or to register, visit the website at www.botanicalmedicine.org

July, 2019. "*Wetlands Flora,"* by Cynthia Lane, Ph.D, Savanna Moon Wildlife Sanctuary, **western WI** (between Lake City and Wabasha). $55 Per Dr. Lane's website description: "This course is designed for professionals seeking to improve their skills in wetland plant identification. Special attention will be given to difficult taxonomic groups including sedges and grasses. Bring a water bottle, hand lenses (10x and 20x), notebook, camera (or phone with camera), and baggies to collect samples." www.savannamoon.org This event qualifies for Workshop Category #2, Wild-plant Walks

August 22nd-25th, 2019. *"Northwest Herb Symposium"* Camp Casey, **Coupeville, WA**. Scads of classes and also herbwalks (which latter qualify for Workshop Category #2, Wild-plant Walks). For more info, visit www.nwherbsymposium.com.

Herbal Adaptogens: What They Are & What They Do

By Matthew Alfs, MH, RH, MWSHS Director

The term "adaptogen" was coined by a scientist named Nikolai V. Lazarev in the year 1947 to define an agent that nonspecifically helped the body to cope with, and thus resist the damaging effects of, stress—in essence, helping one to "adapt" to conditions of stress.

While Lazarev had focused on chemical and other drug-based agents, however, much of the research on adaptogenic *herbs* was actually initiated by a Russian scientist named Israel Brekhman, who worked out of the Far East Science Center in Vladivostock in the Soviet Union during the 1960s. We'll be discussing some of the herbs on which Brekhman and his successors focused in just a bit. But, first, I want to point out that the *idea* of an adaptogen, as opposed to the *term* "adaptogen," is not really that new.

For many centuries prior to the Russian research just mentioned, practitioners of Ayurvedic medicine—which is the traditional medicine of the Indian subcontinent--had implemented a category of herbs that they called *rasayana* tonics to "rejuvenate" the body, mind, and spirit. These practitioners had especially found these herbs to be applicable to elderly persons, weak persons, persons with depleted sexual drive and energy, and others who needed a boost in helping them to deal with life's ravages on the mind, body, and spirit. Such *rasayana* herbs, of which we'll speak more about later, have included powerhouses such as ashwagandha, bacopa (water hyssop), and holy basil (tulsi)

Likewise, in ancient Chinese medicine, herbs such as astragalus, codonopsis, cordyceps, he shou wu (marketed in the West as "fo-ti"), ginseng, licorice, and schizandra were implemented to support the life force, or *qi*, by revitalizing one's innate energies, fortifying one's sex drive, improving the mind and disposition, and encouraging a graceful aging process.

Then, too, on the European and American continents, herbalists in these regions had implemented herbs like American ginseng, eleuthero, and rhodiola to reap these same benefits.

Endocrine, Immune/Antioxidant, & Other Effects of Adaptogens in the Body

But, you might be wondering, what sort of physiological effects--in modern-Western scientific terms—might these herbs produce that would actually enable them to *rejuvenate* the body, the mind, and the spirit?

Here, first of all, I'd like to point out that science has discovered that all of the herbs we will be discussing in this regard are highly potent *antioxidants*, many of which also support production of the body's endogenous antioxidant enzyme, glutathione peroxidase. So, then, as antioxidants, these herbs would oppose the ravages on the mind and body that aging can cause.

Yet, aside from being antioxidants, these herbs have individually been scientifically shown, and clinically observed to be (including with laboratory verification, I might add), *potent modulators of the hypothalmic-pituitary-adrenal axis*--the HPA axis, which, of course, is the interaction between the hypothalamus, the pituitary, and the adrenal glands in regulating adrenal hormones such as cortisol and dehydroepiandrosterone (or, DHEA for short). Cortisol is, of course, the major stress hormone, while DHEA has rightfully been called the "fountain-of-youth" hormone because of its demonstrated ability to soften the ravages of aging.

It's important to understand that the HPA axis is a huge factor in the proper functioning of the immune system, something that we've known since the days of Hans Selye's experiments with rats and the development of his General Adaption Syndrome. Selye, and research since his time, demonstrated that sustained stress disrupts the normal ratio of DHEA to cortisol. In a typical adult, that ratio should be about ten parts DHEA to 1 part cortisol. But the research starting from Selye's time has shown that sustained stress--including not only mental, emotional, and physical stress, but such things as ingestion of refined sugar and caffeine--disrupts this ideal ratio, initially elevating cortisol and then eventually depressing DHEA. Selye and his successors demonstrated that this causes thymic involution and immune depression as a result. Other ways that adrenal hormones affect the immune system have been demonstrated since Selye's time, including the fact that DHEA (along with vitamin D) is involved in the transformation from monocytes to macrophages and that some cytokines (such as interleukin-2) have DHEA receptors and are DHEA-dependent for their potency.

Chronically elevated cortisol also messes up the normal diurnal rhythm relative to melatonin, another hormone that has been scientifically demonstrated to support optimal immune function. Good, solid research has shown that such a disruption of the normal ratio of cortisol to DHEA and of cortisol to melatonin is a factor in almost every immunosuppressive and autoimmune disease known to man. (I want to emphasize that this has been individually demonstrated for practically every known immune-related disease.) Not only that, but sustained cortisol elevation has been shown to negatively impact both memory and cognition, as well as to depress the mood. Now, I can't emphasize enough how widespread is this etiology for depression. Not only has it been

demonstrated to be a powerful factor in the scientific literature since about the mid-1990s, but in our clinic we test the AM and PM cortisol levels of practically every person who complains of depression and we've seen a very strong correlation between depression and a chronically elevated cortisol level. Then, too, hyper-cortisolism is also a demonstrated cause of reduced sex drive. Not only that, but if cortisol is elevated in the evening, it can interfere with sleep. In short, then, it interferes with almost every known "simple pleasure of life," so that it can really rob the joy of life from a person. But, there's more: It has further been connected with both metabolic syndrome (pre-diabetes) and cardiovascular disease. Wow!

Well, I hope you can appreciate, then, the incredible potential of an agent that could enable one to adapt to stress so as to largely offset all of the aforementioned ravages—the immune dysfunction, the mental depression, the insomnia, the reduced sex drive and function, the dysglycemia, and the cardiovascular damage. Simply put, that is the amazing potential of *adaptogenic* herbs!

Now, an illustration from herbal energetics might help you to frame that incredible potential even more concretely: From the standpoint of herbal energetics, the vast majority of adaptogens are *warming* and/or *moistening*. In such respects, then, they fundamentally enhance the energetics *of life*. Why do we say that? Well, a corpse, for example, is cold and dry compared to a living person, is it not? And as people age, do not those two energetic qualities, coldness and dryness, find themselves increasingly being amplified in the body? For example, does not the skin dry out, wither, and becomes wrinkled? Does not a woman's vagina lose its suppleness and its ability to fully moisturize? Does not the internal heat of the body dissipate so that the elderly are constantly turning up the heat on their home thermostats? (Do you remember visiting grandma's house as a kid—how hot you became there after just a short time because she had the thermostat jacked up to 80?) In short, as people age, they steadily lose the warming and moistening energies of life. That is why Hildegard of Bingen, one of the greatest herbalists of all time and even a saint of the Roman Catholic Church, used to say: "You want to stay warm and juicy."

The Energetics of Adaptogens and Their Effects on the Mind & Spirit

Now that we've mentioned the physiological effects of adaptogens in helping to normalize HPA-axis function, we might ask: *But what about the ravages to the mind and the spirit that stress brings?* What effects might adaptogens exert in that regard? Before we answer that, we need a little bit more of a background in herbal energetics: In the Greek system of herbal medicine that developed from Hippocrates and Galen, a predominance of the *warm* and *moist* energetics in a person was understood to lead to a *sanguine* temperament--that is, enabling a person to be peaceful, happy and amiable. In contrast, other combinations of predominant energies were understood to lead either to an irascible, short-tempered personality (the preponderance of the dry and hot bioenergies), or a melancholic/depressed/sad/nervous personality (a preponderance of the dry and cold bionergies). The long and the short of this is that adaptogenic herbs, being warming and moistening, are marvelous *antidepressants,* as we will see when we individually discuss these herbs. So let's do that, shall we?

Research on, and Clinical Applications of, Individual Adaptogens

-- American ginseng *(Panax quinquefolium)* root (Neutral; Moistening)

* Indicated for HPA dysfunction marked by weakness, forgetfulness, low libido, impotence, anemia, palpitations, thirst, and postprandial hyperglycemia. Moistening, for yin-&-qi-deficient individuals. Very helpful for Sjogren's syndrome.

* Libido enhancing. (Not for use with high libido!) A scientific study published in 1998 showed dramatically increased copulatory behavior in male rats given American ginseng for 28 days, which was correlated with a decrease in serum prolactin levels.

* Scientific research has shown that three grams of this botanical, given in capsules 0-120 minutes before a meal, reduced postprandial glucose levels in type-II diabetic individuals. A study published in 2006 indicates that the mechanism of action may involve a stimulation of insulin production and a prevention of beta-cell loss.

-- Ashwagandha [winter cherry] *(Withania somnifera)* root (Slightly Warming; Moistening)

* Indicated for HPA disruption marked especially by chronically or periodically elevated cortisol that manifests symptomatically as memory loss, concentration difficulty, sexual dysfunction, and insomnia

* Has scientifically been shown to protect against the negative effects of chronic stress and to reverse stress-induced changes in plasma corticosterone levels and sexual function.

* In one study, it slowed aging in seniors, consistent with its demonstrated ability to optimize the ratio of DHEA to cortisol.

* In another study, it reduced the serum glucose level, consistent with its abovementioned ability to modulate the level of blood-sugar-raising cortisol in the blood.

* In several mouse studies, this botanical increased serum T_4 (thyroxine) concentrations, so that utilization of this herb has been considered one option considered for modern Western herbalists to aid persons with mild, primary hypothyroidism. (The thyroxine-increasing effect is so effective that, according to the scientific literature, one euthyroid woman who took a high dose experienced symptoms analogous to acute hyperthyroidism [thyrotoxicosis]!) In another mouse study, a combination of this herb with guggul and *Bauhinia purpurea* raised levels of both T_4 and T_3.

* In one study, it enhanced the levels of certain Th1 cytokines (IFN-gamma and interleukin 2) important for protection against viruses and cancer in normal, healthy mice, as well as cytotoxic (killer) T cells

* Research shows that it protects against carcinogenesis from immunosuppressive pharmaceuticals.

* Research has further demonstrated antineoplastic activity for ashwagandha in animals and in human cancer cell lines.

* Its use has also reduced the side effects of both chemotherapeutic drugs and radiation treatment.

In the Ayurvedic tradition, ashwagandha is thought to be especially helpful for males. (It works for women, but takes longer—several weeks, usually--but it kicks in for men right away.)

-- **Astragalus** *(Astragalus membranaceous)* root (Warming)

* In Western herbalism, astragalus is a popular botanical to support immunity in AIDS patients and in cancer patients and is used during cold-and-flu season to strengthen immunity against viral infections.

* In several studies, it was shown to bolster T-cell production and cell-mediated immunity.

* In an *in-vitro* study using graft-vs.-host (GVH) reaction as a test assay, astragalus restored normal T-cell function in 90% of cancer patients.

* A different study even showed restorative effects on host defenses in advanced cancer sufferers.

* Animal studies have shown that the botanical protects against macrophage suppression by existing tumors.

*All in all, astragalus appears to exert its anticarcinogenic effects through cytotoxic activity and via activation of cell-mediated immune cytokines.

-- **Bacopa** (*Bacopa monniera*) leaf (Warming)

* Specific indications are memory loss for recent events or learned facts, nervous depression, poor motor skills, and sexual weakness (impotence, premature ejaculation, infertility).

* It has shown significant adaptogenic effects in several rat experiments, reversing the damage caused by both acute and chronic stress on the adrenals, plasma glucose level, and other parameters.

* In a scientific study published in 2002, this herb, at a dosage of 200 mg/kg, increased serum T_4 in male mice by 41% without enhancing lipid peroxidation, suggesting to the authors a possible role in the treatment of primary hypothyroidism in humans.

-- **Codonopsis** *(Codonopsis lanceolata)* root (Neutral to Slightly. Warming; Drying)

*Known as the "Poor Man's Ginseng" in Chinese medicine; this herb is indicated for fatigue, shortwindedness, weak blood, weak appetite, and palpitations.

* A scientific study published in 1999 revealed that it enhanced Th1-produced cytotoxic (killer) T cells, immunoglobulins from B cells, and interleukin 1 from monocytes.

* Thus, it is also helpful in the elderly, like ginseng (see below)

-- **Cordyceps** *(Cordyceps sinensis)* dried mycelium (Warming)

* Indicated in persons with low libido, fatigue, shortwindedness, weak immunity, premature aging, and weakness. Not for folks with thin blood or who are concurrently using anticoagulants.

* In a scientific study published in 2003, the hot-water fraction of this fungus increased the swimming endurance capacity of mice.

* Concordantly, it has been shown to increase plasma corticosterone levels, but without exerting a constant stimulatory or inhibitory effect on the weight of test animals or their adrenal glands.

* Early twenty-first-century research has shown that an extract of this fungus can lower blood glucose levels by improving glucose metabolism and by optimizing insulin sensitivity.

* In a study examining the survival of mice with lupus, a purified compound (H1-A) from this mycomedicinal inhibited the autoimmune disease progression in the mice, manifested as improved renal function, delayed progression of proteinuria, and reduction of lymphadenopathy. Scientific research has further shown that this mycomedicinal has the capability of modulating the immune response as necessary, increasing Th1 or Th2 cytokines as appropriate.

-- Eleuthero *(Eleutherococcus senticosus)* root bark (Slightly Warming)

* This botanical has scientifically been shown to protect against the negative effects of stress by optimizing the hypothalmic-pituitary-adrenal (HPA) axis.

* When 36 healthy volunteers received 10 ml of a tincture of this botanical three times a day for four weeks, their immunocompetent cells increased drastically as against those taking a placebo, especially by way of the T-helper, cytotoxic, and NK cells.

* This Russian herb has been extensively examined by Russian scientists and clinicians, who have found it to support and to restore immune parameters in cancer patients undergoing chemotherapy or radiation, esp. via their T-helper cells, cytotoxic T lymphocytes, and NK cells.

-- Fo-Ti [He Shou Wou] *(Polygonum multiflorum)* root (Moistening)

* Indications for use include weak blood, hyperglycemia, insomnia, fatigue, elevated blood lipids, hypertension, low libido, sexual weakness, and low-back and knee issues (esp. related to the sartorius, gracilis, & tibialis muscles—all connected to adrenal function).

* The ancient Chinese discoverer of this herb, an elderly man, witnessed his hair change from gray back to black after using this botanical and reportedly went on to live to the age of 160, even fathering children in his old age!

* Fo-Ti has been shown to protect the rat heart against ischaemia perfusion injury and its mitochondria from lipid peroxidation. Later studies showed that pretreatment with the extract reduced cerebral ischemia-induced infarct volume in gerbils, suggesting a possible role in the prevention of stroke. Two studies published a few years later demonstrated that a water-soluble fraction of the botanical reduced the ratio of atherosclerotic-lesioned-areas to total-surface-area in rabbits fed a high cholesterol diet and in rats after an occlusion of their left anterior descending coronary artery had been performed, diminishing as well their arrhythmias as against controls. As the authors of the latter study pointed out, the water-doluble fraction has also been found to promote the release of nitric oxide from vascular endothelial cells and to serve as a powerful antioxidant.

* Fo-Ti has been shown (by an California university!) to support estrogen levels in postmenopausal women.

-- Ginseng *(Panax ginseng)* root (red form, Warming; white form, Neutral)

* Indicated for weak blood, memory loss, insomnia, restlessness, irritability, dream-disturbed sleep, palpitations, chronic tiredness/debility, poor appetite, weak digestion, and sexual debility (incl. impotence in males). Especially indicated for the elderly when experiencing, loss of innate heat and strength.

* Scientific studies have shown that it protects against the harmful effects of stress by directly benefiting the HPA axis, increasing HPA sensitivity through its saponin component.

* Concordantly, it has been shown to facilitate recovery from exhaustive physical activity.

* A scientific journal reported that this herb, in combination with licorice, healed a woman with postpartum hypopituitarism

* It has particularly shown the ability to particularly stimulate lymphocytes in the elderly, in harmony with its traditional use in Chinese medicine as a tonic for the aged.

* This classic adaptogenic herb has been shown in numerous studies to exert an overall immunoenhancing ability that reduces the development of carcinogenesis.

* It has also been demonstrated to upregulate the Th1 cell-mediated immunity needed to fight cancer.

* In a study published in 1997, one of its polysaccharides, ginsan, exhibited antitumor activity *in viv*o against B16 melanoma cell lines.

-- Holy basil *(Ocimum sanctum [tenuiflorum])* leaf (Cooling; Drying)

* Chief herb in Ayurvedic medicine to support the spirit. In scientific studies, this herb has been shown to reduce the overstimulation of the HPA axis that produces excessive cortisol, thus dimming the "flight-or-fight" response.

* In one study, rats subjected to restraint stress found their cardiovascular and liver markers increased; but pretreatment with holy basil prevented this in test subjects as against controls.

* In a study published five years later, holy basil was shown to prevent noise-induced elevation of corticosterone in rats.

* In a still later study, it supported the stress tolerance of adult Wistar rats that were forced to swim in cold water.

* In a study published one year later, its use increased the swimming time of mice. Holy basil's active principles have been shown to be more potent when the herb is used as an alcoholic extract rather than as a hot-water extract.

-- Licorice *(Glycyrrhiza glabra)* root (Moistening)

* Indicated for adrenal-depleted (chronically depressed cortisol) individuals manifesting esp. as fatigue, weak blood, allergies, poor memory, thirst, oily skin, salt cravings, and weak pulse.

* It been shown to help preserve the optimal level of cortisol in the blood by inhibiting its enzymatic breakdown by the liver.

* Licorice mimics aldosterone, although with only a portion of its strength; however, such an ability is significant enough to lower potassium levels in hyperkalemic diabetics suffering from hypoaldosteronism.

* One of the botanical's phytochemicals, glycyrrhizic acid (GI)--as well as its hydrolyzed form, glycyrrhetinic acid (GE)--has been shown to possess an affinity for glucocorticoid and mineralcorticoid receptors, which propensity appears to account for licorice's long-appreciated steroidal effects.

* Its saponins have been shown to enhance the total white blood cell (WBC) count in mice.

* Phytochemicals from his well-known herb have shown potent antitumor activity in scientific experiments. One of these chemicals, glycyrrhizin, enhanced the production of nitric oxide from gamma interferon-activated macrophages, as well as enhanced their tumor cell killing.

-- **Rhodiola** [Arctic root] *(Rhodiola rosea)* dried root (Moistening)

* Indicated for hyperglycemia, depression, poor memory, poor concentration, palpitations, impotence, premature ejaculation, and amenorrhea.

* Scientific research--which is voluminous and includes clinical trials--has shown that it helps protect against the negative effects of mental and emotional stress by optimizing HPA-axis function, thereby creating an antifatigue effect.

* This botanical has been scientifically demonstrated to exert a powerful antioxidant effect against the superoxide anion free radical.

-- **Schizandra** *(Schisandra chinensis)* fruit (Warming; Moistening)

* Esp. indicated with nervous exhaustion, fatigue, low libido, hyperhydrosis, daybreak diarrhea, insomnia w/vivid dreams, thirst, frequent urination or stress incontinence.

* In Chinese Medicine, it is used to restrain what is called "leaky *jing,"* roughly meaning urogenital fluids that depart from the body involuntarily and/or inappropriately. Herbalists have observed that it likewise increases sexual fluids in women, as well as sexual stamina.

* Scientific research has shown that schizandra possesses adaptogenic ability, increasing working capacity and mental endurance, as well as athletic performance and recovery. The latter effect may at least partly be due to its demonstrated effects of increasing endurance.

* It has been shown to fortify mitochondrial antioxidant status, thus safeguarding the mitochondria for production of ATP for energy.

* This botanical has been shown to display a powerful antioxidant action *in vivo*, increasing hepatic glutathione.

* Esp. used as a prophylactic and treatment in hepatic cancer, as it enhances hepatic glutathione stores and upregulates the phase-two liver detoxification process.

* One of its chief chemicals, gomisin A, was shown to inhibit the development of pre-cancerous lesions in the livers of rats.

*A lignan-enriched extract prevented hepatoxicity from both aflatoxin B1 and carbon tetrachloride, two proven liver carcinogens.

* Lends itself esp. for use in AIDS victims, who need to increase their levels of glutathione. In addition, triterpenoid saponins from schizandra's stem have been shown to inhibit HIV activity by inhibiting HIV-1 reverse transcriptase.

* When the fruit was given to 50 chronic hepatitis-C sufferers along with glycyrrhizin, silymarin, ascorbic acid, lipoic acid, glutathione, and vitamin E, the viral load of 25% of the test subjects was decreased and the liver enzymes in 44% of them were normalized.

The MWSHS Herbal Clinic (Midwest Herbs & Healing)

As many of our students are aware, a thriving herbal clinic (or, healing center) is attached to the administrative offices of the Midwest School of Herbal Studies, which center is open four days a week, except for major holidays. This natural-therapies clinic, Midwest Herbs & Healing, is referenced in our herbal-studies programs as "the MWSHS clinic."

Many MWSHS students have referred friends and relatives to our healing center, while still others reading this information may yet wish to do so. In fact, in response to frequent requests from students for information on how to do so, we are happy once again to provide the healing center's contact information, as follows: The phone number is 651-484-0452, the email is MWHrbs@aol.com, and the fax is 651-484-0426. Further details on the center can be accessed via its website at www.midwestherbsandhealing.com.

Moreover, the clinic is stocked with over 200 different, individual herbs (in the form of either tinctures, teas, capsules, solid extracts, or tablets), plus dozens of herbal formulas and also vitamins, minerals, essential fatty acids, acids, essential oils, and personal-care products. Please note that registered MWSHS students who wish to avail themselves of either a mail order or an in-store purchase from Midwest Herbs & Healing *receive a 20% discount off of the retail price for any product stocked* (except for consignment items = essential oils).

The friendly and knowledgeable staff at Midwest Herbs & Healing stand ready to serve both its clients and our students.