

MSU INVESTMENT PROPOSAL FOR INSTITUTIONAL PRIORITIES

PROPOSAL OVERVIEW

Title	Sustainable Food & Bioenergy Systems: An Interdisciplinary Degree Program	Request Date	
Department	PSPP, LRES, ARNR, HHD	Email	wdyer@montana.edu
Requestor	William E. Dyer, PSPP	Phone	994-5063

STRATEGIC ALIGNMENT

Core Themes and Objectives (check all that apply)

Educate Students

- X Our graduates will have achieved mastery in their major disciplines
- X Our graduates will become active citizens and leaders
- X Our graduates will have a multicultural and global perspective
- X Our graduates will understand the ways that knowledge & art are created and applied in a variety of disciplines
- X Our graduates are prepared for careers in their field
- X We will provide increased access to our educational programs
- X Communities and external stake holders benefit from broadly defined education partnerships with MSU

Create Knowledge and Art

- X Students, faculty, and staff will create knowledge and art that is communicated widely

Serve Communities

- X We help meet a fundamental need of the citizens of Montana by providing degree programs for our students
- X We help meet the educational needs of the citizens of Montana by providing a wide range of educational opportunities to a variety of students
- X Our students, faculty, staff, and administrators reach out to engage and serve communities
- X Our students, faculty, staff, and administrator reach in to build the university community

Integrate Learning, Discovery, and Engagement

- X Each graduate will have had experiences that integrate learning, discovery and engagement
- X Outreach activities will educate students and address the needs of the communities we serve
- X Students, faculty, and staff will create knowledge and art that addresses societal needs
- X MSU is a community that will be characterized by synergy within and across disciplines, roles and functions.

Stewardship

- X The public trusts the institution to operate openly and use resources wisely
- X The faculty and staff are well-qualified and supported
- X MSU will support Native American students, programs, and communities
- X MSU will be an inclusive community, supporting and encouraging diversity
- X Our publicly provided resources are used efficiently and effectively
- X Natural resources are used efficiently and sustainably
- X MSU nurtures a culture of resource conservation and ecological literacy among students, faculty and staff
- X Our physical infrastructure (e.g., building, equipment, open spaces) will be well-maintained and useful

INSITUTIONAL BENEFIT													
Campuses	X Bozeman <input type="checkbox"/> Billings <input type="checkbox"/> Havre <input type="checkbox"/> Great Falls <input type="checkbox"/> FSTS <input type="checkbox"/> Extension <input type="checkbox"/> MAES												
Cross Depts	Please List: PSPP, LRES, ARNR, HHD												
TIMEFRAME													
Proposed Dates	Start: Dec 1, 2011			End: N/A									
COST AND REQUIREMENTS													
Funding Type	One-Time (\$)	Multi-Year (\$)			Base (\$)	FTE							
		Year 1	Year 2	Year 3									
Personnel (w/benefits)		122,850	122,850	122,850	122,850	1.0							
Materials & Supplies													
Travel													
Contracted Services													
Capital	3,700												
Other Operations													
TOTAL	3,700	122,850	122,850	122,850	122,850	372,250							
Please comment, if necessary, regarding cost and requirements.	<p>Base funding is requested to support a 1.0 FTE, 12-month, tenure-track position in the College of EHHD (0.4 teaching, 0.2 research, 0.3 administration, 0.1 service). This new hire will assume the SFBS Program Coordinator duties, oversee all THG activities, teach SFBS 146 (Intro to SFBS), SFBS 246 (Towne's Harvest Practicum), SFBS 498 (SFBS Internship), and conduct /coordinate relevant interdisciplinary research. Annual salary is requested at \$55,000 plus 35% benefits (\$74,250).</p>												
	<p>Base funding is requested to support a full-time THG production manager at an annual salary of \$36,000 plus 35% benefits (\$48,600). This critical position must be supported by institutional funding in order to avoid the inherent conflict between maximized crop production and optimized teaching opportunities (please see text below).</p> <p>OTO funds (\$3,700) are requested towards the purchase of an automated weather station (\$1,200) and data logging equipment (\$2,500) at THG. This equipment is necessary to support on-farm research addressing nutrient cycling, soil fertility, soil compaction, water quality, weed thresholds, crop rotation effects, and other current issues in market garden production. This funding will complement pledged support from Dean Jacobsen in the amount of \$13,446 for mechanized tillage, planting, and weed control equipment at THG, including a Celli 47" spading machine, a 3 row planter, a row cultivator with attachments, and two field carts.</p> <table border="0"> <thead> <tr> <th>Priority</th> <th>Item</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Tenure-track line in EHHD</td> </tr> <tr> <td>2</td> <td>THG production manager</td> </tr> <tr> <td>3</td> <td>OTO funding for weather station and data logging at THG</td> </tr> </tbody> </table>						Priority	Item	1	Tenure-track line in EHHD	2	THG production manager	3
Priority	Item												
1	Tenure-track line in EHHD												
2	THG production manager												
3	OTO funding for weather station and data logging at THG												

PROPOSAL SCOPE

Describe the Proposal

The Sustainable Food & Bioenergy Systems Degree program is a nationally unique interdisciplinary curriculum that was initiated in January, 2009 with extramural funding. The program consists of four options across two Colleges: Sustainable Food Systems (Dept of Health and Human Development; College of EHHD); and Sustainable Crop Production (Dept of Plant Science and Plant Pathology), Agroecology (Dept of Land Resources and Environmental Science), and Sustainable Livestock Production (Dept of Animal and Range Sciences; College of Ag). The related Towne's Harvest Garden (THG) and its associated community supported agriculture (CSA) program provide an ideal field laboratory for conducting interdisciplinary research and teaching. Now in our third year, we have more than 90 majors and enrollment continues to increase. Until recently, SFBS and THG have been supported mostly by extramural funding, as well as significant investments from the pertinent departments and colleges. However, this financial model does not provide for long-term program stability, due to the vagaries of extramural grant success and changing priorities. SFBS program stability can only be achieved by permanent, institutional support. This support is warranted because *this institutionally unfunded, interdisciplinary program addresses all of the MSU Core Themes shown on the proposal cover page.*

This request is being put forward in response to verbal promises we received that the program, if successful, would be supported at the university level. Also, our request is necessary because it is becoming abundantly clear that interdisciplinary (and inter-college) programs absolutely require institutional resources to be sustained. Unlike traditional degrees, SFBS requires an ongoing priority to *intentionally and proactively* connect partner faculty from the cooperating disciplines, students from within degree options, and statewide stakeholders. These tasks cannot be fulfilled by departmental personnel due to limited knowledge of the entire interdisciplinary span of the program. Our previous SFBS Program Coordinator fulfilled this role with outstanding success, until recently when our extramural and EHHD funding expired. Provost Potvin has graciously provided bridge funding for this temporary position for six months, but a permanent solution is now required. Therefore, we now request permanent funding, *at a level above departments and colleges*, to support a tenure-track line in HHD who will take on SFBS program coordination, provide missing interdisciplinary teaching expertise, and help create more possibilities for externally funded interdisciplinary research. In this regard, our recent attempts to garner extramural support for these tasks have been rebuffed by granting panels because "the university should be providing for these institutional needs."

In addition to SFBS interdisciplinary coursework, the THG market garden provides an ideal setting for experiential learning, community involvement, and interdisciplinary research in a living laboratory. For the past four years, THG has generated the majority of its own financial support, including salary for the production manager, through the sale of vegetables (see <http://townesharvest.montana.edu/newsletter.htm> for annual reports and budgets). However, recent enrollment increases and the need for year-round THG management make this financially impossible. Also, this fiscal model creates an inherent conflict of interest, as pointed out in our student evaluations, between maximizing production and providing the best learning experience for students. Therefore, we must now create a different and more sustainable management model in which the production manager is supported by base funding at the university level. In turn, future income from vegetable sales will be continue to be used for annual farming expenses, additional THG staff wages, student scholarships, and other program needs.

THG operations critically need weather recording equipment to support agronomic research. This equipment will complement the recent pledge from Dean Jacobsen (\$13,446) toward the purchase of mechanized agronomic equipment, enabling us to better address teaching and research needs at that facility. Further, he has secured funding for a new, shared use building at THG, demonstrating a significant College investment in SFBS and THG. A modest level of OTO funding from MSU will help our efforts to improve research and teaching capabilities at THG.

An institutional investment in this institutionally unfunded, interdisciplinary program will provide for: 1) program coordination (previously supported by extramural funding), 2) full-time management and supervision of the THG program (previously funded by produce sales, extramural funding, and administrative start-up funds), 3) a new faculty line who will fulfill necessary research and teaching duties for the SFBS program as well as MSU sustainability needs, and 4) one-time equipment improvements at THG. Faculty associated with the SFBS/THG program have already attracted nearly \$1.3 million in competitive, extramural funding, including \$750,000 by P. Hatfield (ANRN) that integrates THG into a highly unique research project to incorporate sheep grazing into organic systems. SFBS also contributes over \$500,000 in annual tuition payments, and is poised to attract much more from both sources, once basic operational and infrastructure needs are supported by base funding adjustments from the university.

MSU investment funding will significantly help address some of the curriculum, research, and administrative gaps in the SFBS program. We are limiting this request to only one faculty line in response to advice from Provost Potvin and others that we should exercise fiscal restraint. However, there remain significant curricular and research gaps in available faculty expertise, and so we also plan to vigorously pursue other avenues to gain a second FTE in the College of Agriculture. These additions are necessary to provide complete and comprehensive coverage of the vast food and bioenergy systems in this country.

PROPOSAL SCOPE

Describe the broader impacts and benefits of this proposal

The SFBS program has already made substantial impacts on the MSU campus and beyond, and is poised to create further benefits in academic programs, campus sustainability, national recognition, student recruitment and retention, community engagement, and interdisciplinary research.

Expanding Academic Programs: In developing curricula for the four options, we have created eight new courses under the new SFBS rubric. Meanwhile, several existing courses required in SFBS options are experiencing record enrollments, like the HHD courses NUTR 322/395 and SFBS 451R, which are now offered annually rather than alternate years. Further, student credit hours pre-SFBS/post-SFBS have increased dramatically in: AGSC 341 (Field Crop Production) - 66/126; HORT 345 (Organic Market Gardening) – 30 (or 0 when cancelled due to low enrollment)/57; HORT 337 (Vegetable Production) – 69/93; AGSC 342 (Forages) – 66/129; and AGSC 441 (Crop Breeding) – 12/42. The new faculty line requested in this proposal will allow us to offer other, needed courses.

Enhanced Campus Sustainability: The SFBS Program is regarded by many to be the signature interdisciplinary, sustainability program in the MUS system and across the state. We sponsor a seminar series and collaborate with other groups on campus (Friends of Local Foods, NECO, Engineers without Borders) to invite nationally recognized speakers. The SFBS Coordinator serves on the MSU Campus Sustainability Advisory Council and its curriculum committee, coordinating campus efforts like the sustainability certificate/minor. We have an active Farm-to-College (Montana Made) program that utilizes THG produce in University Food Service offerings and manages MSU food waste in our composting operation. SFBS is also closely connected with a very active student club, and we operate an educational farm stand on campus. The institutional support requested in this proposal will clearly demonstrate a concrete commitment from the central administration towards these efforts.

Growing National Recognition: Our program has rapidly gained an outstanding reputation and is recognized as a national model (see articles in Newsweek, Inside Higher Ed, and others at <http://sfbs.montana.edu/News.html>). The program is unique in that it connects agricultural production science, nutrition and community health, and components of bioenergy production. The SFBS vision for an American future that contains strong local food and bioenergy systems resonates deeply with a growing segment of American society. The MSU campus, and Montana in general, are enjoying wide recognition as national leaders in the sustainability movement, largely due to the SFBS program. Institutional support will allow us to fill critical gaps in faculty expertise to complete our curriculum offerings, provide a richer student experience, and compete more successfully for national funding.

Improved Student Recruitment and Retention: We have documented a significant number of incoming freshmen who state that they chose to attend MSU specifically because of the SFBS program. Tuition dollars from these and other SFBS majors amount to more than \$500,000 annually, and enrollment continues to grow. MSU Admissions Director Ronda Russell is particularly excited about the recruitment potential of the SFBS program. Numerous pedagogical studies show that experiential and service learning, as offered at THG, contribute greatly to successful student retention. We believe that active student mentoring and advising, as assisted by the new faculty line requested here, will foster student retention rates that are well above the norm.

Robust Community Engagement: THG, its associated CSA operation, and our connections with the Gallatin Valley Food Bank and local partner farms provide rich opportunities for MSU outreach and direct community involvement. Student experiences and internships on local farms provide a direct linkage between MSU staff and local stakeholders. On a larger scale, upper division internships place SFBS students on Montana farms, NGOs, state agencies, and other local, regional, and national food and bioenergy entities. These connections, as well as our close relationships with the Montana Organic Association, the Alternative Energy Resources Organization, Montana Indian Reservations, and other groups reach a significant segment of state and regional stakeholders that typically have not had active associations with MSU. Institutional support will allow us to expand these relationships and further burnish the sustainability image of MSU.

Genuine Interdisciplinary Research: We currently have ten graduate students conducting research or independent studies directly related to the SFBS program, even in the absence of an end-point graduate degree in SFBS. We regularly field inquiries from prospective graduate students, indicating a strong demand for an eventual MSU SFBS graduate program. The program's ability to cut across college and university boundaries positions it to create truly synergistic, interdisciplinary research collaborations on timely and relevant issues. As demonstrated by our recent MSU Congressional Appropriation requests, our research focus and interests are exactly in line with national funding priorities. In particular, recent changes to USDA/NIFA program priorities directly reflect a strong national interest in the kind of food and bioenergy systems that SFBS addresses.

The program's accomplishments to date have been the direct result of strong commitment from a small cohort of faculty and staff who have dedicated countless hours to obtaining extramural funding from multiple sources. We certainly appreciate the assistance, moral support, and at times strong encouragement already offered by MSU administrators, but the program now critically needs a concrete financial commitment from the institution. We believe that the SFBS program, beyond offering B.S. degrees, has significant, untapped potential to excel in research, instruction, and outreach opportunities, once basic program needs are met.

ADDITIONAL INFORMATION

Implementation Plan *(Please describe with timelines)*

The SFBS program is currently operating without a coordinator, although Provost Potvin recently provided bridge funding to support a half-time position for six months. Towne's Harvest Garden is being funded solely from 2011 produce sales, which will be exhausted by May 2012. Timely institutional support is critical to ensure program continuity and continued success.

Proposed Timeline:

March 2012: Post job announcement for tenure track position in EHHD; also begin funding for THG manager position
June 2012: Conduct interviews
July 2012: Complete hire
August 2012: New staff appointment begins

Assessment Plan *(Please describe with indicators)*

The SFBS program is continually being assessed. A rigorous evaluation protocol includes a baseline/post student survey given at the start and conclusion of the introductory course, pre/post surveys for each field experience and capstone course, and an exit interview with each graduating senior. The purpose of student surveys and interviews is to assess the impact of each major curricular component, as well as the program as a whole. Program goals are:

Goal 1: Through SFBS major and coursework, involve an increasing number of students in the study of agriculture, food and bioenergy.

Objectives: 1) Increase number of courses in the program after year 1 by 4 [ALREADY MET]; 2) Increase enrollment in existing food and agriculture courses by 30% [ALREADY MET]. 3) Add 20 student majors/year after year 1; with goal of 100 majors by end the 4th year, when second class graduates. [Original Goal in curriculum proposal was 50 majors at the end of year 5]. 4) Increase the number of students involved in THG by 20% per year [ALREADY MET].

Goal 2: Produce graduating professionals who understand the whole food & energy system from production through consumption.

Objectives: 1) Graduating students can verbalize their understanding of the food and energy system in an exit interview. 2) Graduating students can verbalize the importance and benefits of their interdisciplinary training in an exit interview. 3) Graduating students can verbalize how they have become systems thinkers in an exit interview.




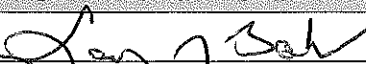


Goal 3: Contribute to Montana's food & energy system infrastructure through entrepreneurship and job development.

Objectives: 1) Provide job and career information for current and former students on the web site. 2) 25% of graduates will work on some aspect of Montana's food system. 3) Ten percent of graduates will pursue entrepreneurial food system work in Montana.

If assessed objectives are not met in the timeframe outlined, what is the plan to sunset this proposal?

Without committed university support, we must make some hard choices about the future of this program. Obviously we have an ethical obligation to currently enrolled students to allow them to complete their degrees. Beyond that, we offer the following options, none of which is attractive, for the immediate future:

- Freeze enrollment of new SFBS majors;
- Discontinue program marketing and recruiting endeavors;
- Delete the SFBS web site;
- Remove interdisciplinary field experiences from the degree program, including the THG practicum;
- Discontinue senior level internships;
- Eliminate monthly SFBS seminars, disband our MSU advisory committee, and our external program advisory task force; and
- Eliminate the introductory SFBS 146 course (enrollment ~85 students).

SIGNATURES		
Department Head (please print)	Signature (required)	Date
JOHN SHEPWOOD		12/22/11
Dept Head Priority (please circle one):	Very High <input checked="" type="radio"/> High <input type="radio"/> Medium <input type="radio"/> Low <input type="radio"/> Very Low	
Department Head (please print)	Signature (required)	Date
Glenn Duff	 #2 of 2	12/23/11
Dept Head Priority (please circle one):	Very High <input checked="" type="radio"/> High <input type="radio"/> Medium <input type="radio"/> Low <input type="radio"/> Very Low	
Department Head (please print)	Signature (required)	Date
Tracy Sterling		12/23/11
Dept Head Priority (please circle one):	<input checked="" type="radio"/> Very High <input type="radio"/> High <input type="radio"/> Medium <input type="radio"/> Low <input type="radio"/> Very Low #1 of 4	
Department Head (please print)	Signature (required)	Date
Mark Nelson		12-29-11
Dept Head Priority (please circle one):	<input checked="" type="radio"/> Very High <input type="radio"/> High <input type="radio"/> Medium <input type="radio"/> Low <input type="radio"/> Very Low	
Dean/Director (please print)	Signature (required)	Date
Larry Baker		12-29-11
Dean/Director Priority (please circle one):	<input checked="" type="radio"/> Very High <input type="radio"/> High <input type="radio"/> Medium <input type="radio"/> Low <input type="radio"/> Very Low	
Dean/Director (please print)	Signature (required)	Date
Jeff Jacobsen		12/30/2011
Dean/Director Priority (please circle one):	<input checked="" type="radio"/> Very High <input type="radio"/> High <input type="radio"/> Medium <input type="radio"/> Low <input type="radio"/> Very Low	3 of 8