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A Critical Evaluation of the UVM Food Systems Web Presence: An Information Architecture Approach

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UVM Food Systems Website Analysis

The University of Vermont (UVM) is a small public research university whose "mission is to support and foster interdisciplinary and disciplinary research, scholarship, innovation and creative works" (University of Vermont, 2015c, para. 1). In 2009, UVM developed a competitive process to cultivate new transdisciplinary research initiatives (TRIs) in order to "strategically advance our national role as a premier small research university" (University of Vermont, 2015d, para. 1). Eight potential areas of transdisciplinary excellence were identified and working groups were convened to submit formal proposals, which were then vetted by internal and external review panels. In February 2010, the *Transdisciplinary Research Initiative Spire of Excellence Proposal: Food Systems* (Grubinger et al., 2010) was submitted, and in April 2010, Food Systems was competitively selected as one of three transdisciplinary research initiatives.

"The Food Systems Initiative focuses on the critical role of our local, regional, national and global food systems as they, in turn, affect soil and water quality, human health and nutrition, global economics, packaging and transportation interests, and overall food and energy security. Food Systems is a nascent field of study nationally and an emerging strength at UVM that is particularly well-suited to the UVM Land Grant mission of research and engagement in the 21st century. This Initiative will be grown from one of the strongest applied research and scholarship strengths at UVM: our connection to Vermont's working landscape" (University of Vermont, 2015e, para. 1–2).

Initially, the charge of the Food Systems TRI was to support, "a community of scholars, practitioners, educators, students, and civic partners who actively engage in generating, communicating and applying new knowledge that ensures the present and future viability of smaller-scale food systems, with implications from the local to the global" (University of Vermont, 2011, p. 6). This work included: the identification of existing or creation of new food systems-related research; the creation of courses and programs to develop food systems leaders; and a sharing of knowledge through lectures, seminars, and other events.

In 2011-2012, as part of the UVM Center for Rural Studies' Food System Research Collaborative, a series of working papers were written, "to further food system research and enhance linkages to the work on the ground in Vermont and beyond" (University of Vermont Center for Rural Studies, n.d., para. 1). In 2012, the first UVM Food Systems Summit was held, "drawing scholars, practitioners, and food systems leaders to engage in dialogue on the pressing food systems issues facing our world" (University of Vermont Food Systems Research Initiative, 2015, para. 2). Academic year 2012-2013 also saw the first cohort for the newly developed Food Systems master's program.

Momentum on campus has only continued to grow. UVM's Continuing and Distance Education developed a series of related educational programs, including the Farmer Training Program, the Food Hub Management Program, and the Breakthrough Leaders Professional Certificate in Sustainable Food Systems (University of Vermont Continuing and Distance Education, n.d.-b). Academic year 2015-2016 saw the launch of the Food Systems PhD program, and the Faculty Senate Curriculum Committee is currently evaluating a proposal for an undergraduate degree in Food Systems.

With food systems work being carried out in multiple domains across campus, numerous stakeholders are invested in the dialogue surrounding the mission and message of Food Systems at UVM. These stakeholders include: the Food Systems Research Initiative Director and Steering Committee; the Food Systems Graduate Program Faculty Director and Steering Committee; the Dean of Continuing and Distance Education; and faculty from across the university. As a result, there has been increased interest in the promotion and marketing of UVM's food systems work via the Internet.

Websites have become a crucial tool in higher education, as an institution's website is the most visible way in which a school can use the Internet. Websites provide the first point of contact for prospective students seeking information, as well as serve as a platform for interaction between students and faculty. Websites are also a link with the outside world, connecting higher education with communities, organizations, and professionals. But multiple programs, stakeholders, and technology options can make creating higher education sites a major challenge.

In the spring of 2015, Josie Davis, Associate Dean, College of Agriculture and Life Sciences, convened a meeting of CALS faculty to discuss the development of a Food Systems web portal. Prior to the development of a new website focused on Food Systems at UVM, the purpose of this project is to evaluate the content and strategy of two existing UVM food systems websites: the Food Systems Research Initiative website (https://www.uvm.edu/foodsystems/) and the Food Systems Graduate Program website (http://www.uvm.edu/foodsystemsprogram/).

Information Architecture: A Research Framework for Web Design

A framework based on the principles of information architecture is crucial to a successful website design. According to Rosenfeld, Morville & Arango (2015), *information architecture* is defined as:

1. "The structural design of shared information environments,
2. The synthesis of organization, labeling, search, and navigation systems within digital, physical, and cross-channel ecosystems,
3. The art and science of shaping information products and experiences to support usability, findability, and understanding, and
4. An emerging discipline and community of practice focused on bringing principles of design and architecture to the digital landscape" (Definitions, para. 1).

Information architecture focuses on *information ecology*, the intersection between context, content, and users (Rosenfeld et al., 2015) (Figure 1). *Context* refers to the goals, budget, technology, infrastructure, human resources, and corporate culture or political environment governing the website. *Content* refers broadly to the web pages, documents, data, images, multimedia files, etc., that together create the basis for the website. *Users* are the people or audiences who have a specific information need from your website, and are the ultimate judge of a website's effectiveness.

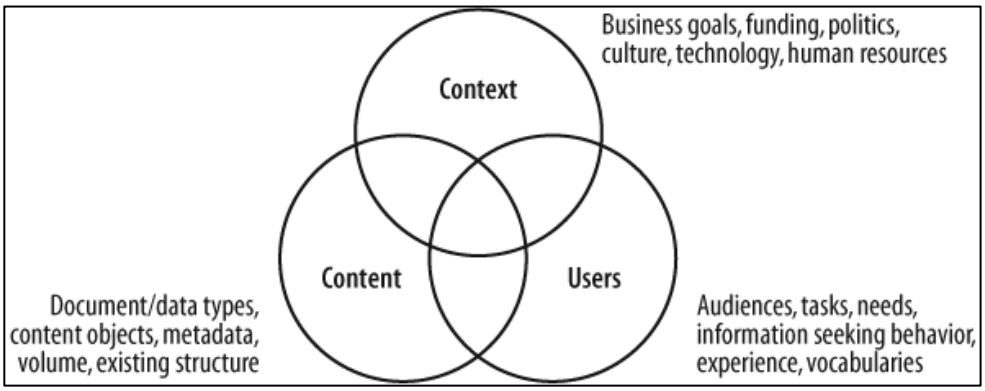


Figure 1. A balanced approach to website design (Arango, Morville & Rosenfeld, 2015, Definitions para. 7)

Cross-cutting these three areas are three core principles of web design: usability, findability, and aesthetics of design:

- **Usability**, or a focus on the user experience (UX), takes into account the experiences of users interacting with the website in the real world. Users are ultimately alone in determining how to navigate and use a site in order to satisfy their needs. The practice of creating an engaging and efficient user experience is called *user-centered design*, which is "based upon an explicit understanding of users, tasks, and environments; is driven and refined by user-centered evaluation; and addresses the whole user experience" (U.S. Department of Health & Human Services, 2015d, para. 2). User-centered design begins with specifying the context of use: who will be using the website, why, and under what conditions? By focusing the lens on the user's experience with a website, websites can be designed to improve performance, increase exposure, and improve credibility (U.S. Department of Health & Human Services, 2015a)
- **Findability** is defined as, "1. The quality of being locatable or navigable, 2. The degree to which a particular object is easy to discover or locate, and 3. The degree to which a system or environment supports navigation and retrieval" (Morville, 2005, Definition, para. 1). Principles of findability supersede usability: users need to be able to find the content before they are able to use it.
- **Aesthetics**, the nature and appreciation of beauty, serves a function beyond just visual appeal. According to Norman (2005), aesthetics support clarity, communication, comprehension, and emotion. Emotions affect our ability to solve problems. Finding something attractive is a positive experience, and when we're in a positive mood we are more forgiving of interface obstacles, and we're better able to solve problems creatively. This relationship between interface attractiveness and improved usability is known as the *aesthetics-usability effect*.

Methods

The information architecture framework is a multiphase process, including research, strategy, design, implementation, and administration (Figure 2). *Research* is the phase of the process that reviews the existing website(s) and related materials in order to develop an

understanding of the goals and context, the existing information architecture, the content, and the intended audiences. *Strategy* develops a foundation for the information architecture of the new or redesigned website by focusing on the planning, creation, delivery, and governance of the content. The *design* phase builds the foundation of the site through the creation of sitemaps and wireframes, while *implementation* refers to the process of the website being built, tested, and launched. The final phase of the web design process is *administration*, focused on continuous evaluation and improvement of the website.

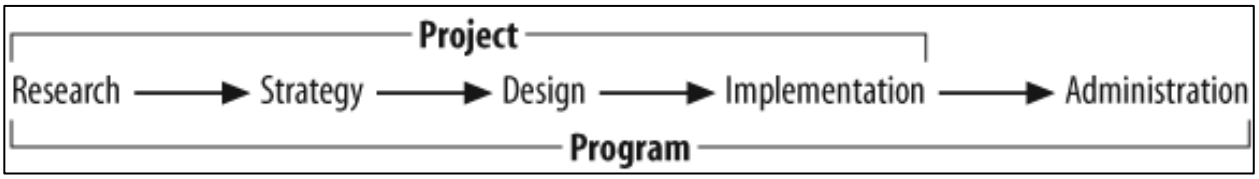


Figure 2. A balanced approach to website design (Arango, Morville & Rosenfeld, 2015, Information Architecture Research Framework, para. 2)

This project focuses on the research phase of web design: reviewing the current content, context, and users of the UVM Food Systems Graduate Program (http://www.uvm.edu/foodsystemsprogram/) and UVM Food Systems Initiative (https://www.uvm.edu/foodsystems/) websites. The methods employed include:

- **Heuristic evaluation**: an expert critique that tests a website against a set of usability heuristics, or guidelines, for user interface design, which includes flexibility and efficiency of use, consistency and standards, error prevention, and aesthetic and minimalist design (Nielsen, 1995).
- **Content analysis**: an evaluation of the content of a website, including text, images, documents, etc. (U.S. Department of Health & Human Services, 2015b). A content analysis is useful for determining the scope and nature of the content accessible on a website. Data collected for the inventory focused on the hierarchy of the website, including navigation title, page title, URL, and subject for every page.
- **Benchmarking**: a process that involves the systematic identification, evaluation, and comparison of information architecture features of a website with competing or comparable websites (Berkun, 2003).

The heuristic evaluation provides a top-down understanding of an information environment's organization and navigation structures, while a content analysis provides a bottom-up understanding of its content objects (Rosenfeld et al., 2015). In order to bridge these two perspectives and merge them with a benchmarking study, a comprehensive evaluation rubric was developed.

Web Design Scoring Rubric

In a white paper on communication and higher education, international communications agency Noir Sur Blanc (n.d.) identified the crucial elements of a university's website, including: high aesthetic and graphical quality; ergonomics (an intuitive navigation system and information architecture to enable users to find the right information); rich, relevant,

and quality content; and regularly updated. Taking into consideration these aspects and the core principles of website design, a rubric was developed based on the methods of heuristic evaluation, content analysis, and benchmarking. This rubric was used to evaluate both graduate program and research center websites across four dimensions:

- **Functionality** refers to the interaction between the website and the site visitor. Every component of the website needs to work quickly and correctly. Categories evaluated include: number of broken links; spelling and grammar errors; inclusion of a search box; whether the website is mobile-friendly; and the website load times for both desktops and mobile devices.
- **Usability**, or user-centered design, refers to the ease of use of the website. Categories evaluated include: consistency in layout; organization and functionality of navigation; breadth and complexity of navigation menu; numbers of clicks required to get to desired content; link labeling; contrast between text color and background color; and web accessibility.
- **Aesthetics** refers to the visual appeal, unity, and balance of the website. Categories evaluated include: organization of layout; choice of color palette; font and text size choices; utilization of graphics; integration of dynamic content; and overall simplicity of design.
- **Content** refers to the substance of the website, the information that users are looking for to answer a question or make a decision. General categories evaluated include: short and organized copy; regularly updated content; inclusion of social media; and overall utility of content based on purpose of website.

To address the unique content of these two distinct categories of websites – graduate program websites and research center websites – a content inventory was conducted of a sample of the benchmarking websites. The inventory provided the major themes or content areas covered by each website, which were integrated into the rubric.

Content areas for graduate program websites include: admissions and program information for prospective students; information for current students; information on curriculum and courses; faculty directory; student directory; information for post-graduates and alumni; information for the community or professionals; and news and events. A full scoring rubric for graduate websites can be found in Appendix E.

Content areas for higher education research center websites include: mission and vision of organization, including annual reports; research areas; related publications; affiliated personnel directory; a section for students and continuing education opportunities; donation page; and news and events. A full scoring rubric for research center websites can be found in Appendix F.

UVM Food Systems Graduate Program Website: Content Analysis

University of Vermont, Food Systems

The UVM Food Systems Masters Program website (http://www.uvm.edu/foodsystemsprogram/) serves as the primary point of information for prospective and current students. The website provides admissions information, including a link to application information; highlights the requirements of three degree programs (Accelerated Master's, Master's, and PhD); outlines the integrated curriculum; provides contact information for Food Systems faculty and staff; and links to related food systems information.

Purposeful Sample Selection

The UVM Food Systems Masters Program website was benchmarked against a purposeful sample of similar graduate programs. As UVM's program transdisciplinary food systems program is unique, comparators selected include other interdisciplinary or transdisciplinary graduate programs focused in the fields of food and nutrition, policy, public health, and environmental studies (Table 1).

These 11 programs were evaluated using the rubric found in Appendix E. It should be noted that not all program websites have equitable content: some websites, such as UVM's Food Systems Graduate Program or Green Mountain College's Master of Science in Sustainable Food Systems, are at the program-level, while other websites, such as Johns Hopkins University or New York University, are at the school-level. In the latter's case, the overall website was evaluated for functionality, usability, and aesthetics, while content was evaluated at the program level. Results of the evaluation can be found in Table 2.

Strengths

In the analysis across the four dimensions, the UVM Food Systems program website was one of the top performers in terms of functionality. It was the only website that was mobile compatible, and had the fastest load times for both the desktop and the mobile tests. The site had very few broken links or link redirects. The website also scored highly in terms of usability. The navigation menu was well organized and consistent, with the majority of the content being within three clicks of the homepage. It also did the best of all websites in the web content accessibility tests, ensuring that the website can be accessed by people with diverse abilities. Finally, this website does a very good job of "writing for the web" – using short chunks of text and plain language – which helps users find what they need, understand what they have found, and then use it to meet their information needs.

Weaknesses

The strengths of the website – high functionality, usability, and simplicity of aesthetic – are in part a result of its main weakness: the content offered for different personas – the

Table 1. UVM Food Systems Masters Program Peer Program Websites

Program	URL	Degrees Offered
University of Vermont, Food Systems	http://www.uvm.edu/foodsystemsprogram/	• Accelerated Master's in Food Systems • Master's in Food Systems • Doctor of Philosophy in Food Systems
Chatham University, Food Studies	http://falk.chatham.edu/mafs/	• Master's of Arts in Food Studies
Green Mountain College, Sustainable Food Systems	http://www.greenmtn.edu/academics/graduate/msfs/	• Master of Science in Sustainable Food Systems
Indiana University, Bloomington, School of Public and Environmental Affairs	https://spea.indiana.edu/	• Master of Public Affairs • Master of Science in Environmental Science • Master of Arts in Arts Administration • 2 dual Master's programs • Doctor of Philosophy in Public Affairs • Doctor of Philosophy in Public Policy • Doctor of Philosophy in Environmental Science
Johns Hopkins University, Bloomberg School of Public Health	http://www.jhsph.edu/	• 7 Master's degrees • 6 dual Master's programs • 25 Doctor of Philosophy degrees • 8 Doctor of Science degrees • 7 Doctor of Public Health degrees • 1 dual PhD program
New York University, Nutrition, Food Studies, and Public Health	http://steinhardt.nyu.edu/nutrition/	• Master's in Food Studies • Master's in Clinical Nutrition • Master of Public Health • Doctor of Philosophy in Food Studies • Doctor of Philosophy in Nutrition and Dietetics • Doctor of Philosophy in Public Health
Tufts University, Agriculture, Food and Environment	http://www.nutrition.tufts.edu/academics/afe	• Master of Science in Agriculture, Food, and Environment • Doctor of Philosophy in Agriculture, Food, and Environment
University of British Columbia, Integrated Studies in Land and Food Systems	http://www.landfood.ubc.ca/academics/graduate/islfs/	• Master of Integrated Studies in Land and Food Systems • Doctor of Philosophy in Integrated Studies in Land and Food Systems
University of California Davis, Ecology	http://ecology.ucdavis.edu/	• Master's of Science in Ecology • Doctor of Philosophy in Ecology
University of California Santa Cruz, Environmental Studies	http://envs.ucsc.edu/index.html	• Doctor of Philosophy in Environmental Studies
University of Vermont, Community Development and Applied Economics	http://www.uvm.edu/cdae/	• Master's of Science in Community Development and Applied Economics • Master of Public Administration

Table 2. Website Content Analysis Scores: Graduate Program Websites

	University of Vermont	Chatham University	Green Mountain College	New York University*	Tufts University^	University of British Columbia
Functionality						
Broken Links	above average	average	average	average	average	average
Spelling & Grammar	average	excellent	above average	below average	excellent	excellent
Search Box	yes, parent site	yes, parent site	yes, parent site	yes, parent site	yes, parent site	yes
Homepage Load Time: Desktop	3.306s	7.730s	9.676s	5.945s	5.025s	4.285s
Homepage Load Time: Mobile	5.751s	18.030s	14.309s	12.103s	7.995s	13.104s
Mobile Friendly	moderately	no	no	no	no	no
Usability						
Layout Consistency	above average	excellent	excellent	above average	above average	poor
Navigation: Organization	excellent	excellent	excellent	average	excellent	average
Navigation: Options	excellent	average	excellent	excellent	average	poor
Navigation: Functionality	above average	above average	above average	above average	excellent	poor
Navigation: Click-Throughs	above average	excellent	excellent	above average	average	above average
Link Labels	excellent	above average	excellent	excellent	average	above average
Color Contrast	excellent	excellent	above average	excellent	above average	excellent
Accessibility Problems	0 known 1 likely 177 potential	14 known 0 likely 249 potential	15 known 0 likely 936 potential	12 known 0 likely 379 potential	841 known 3 likely 676 potential	15 known 2 likely 560 potential
Aesthetics						
Layout: Organization	above average	above average	above average	above average	above average	below average
Color Palette	excellent	excellent	excellent	excellent	excellent	excellent
Font	above average	above average	excellent	above average	above average	below average
Graphics	below average	below average	average	above average	below average	below average
Dynamic Content	no	no	no	yes	yes	no
Simplicity	average	average	above average	above average	below average	average
Content						
Copy	excellent	average	average	average	below average	above average
Regularly Updated	average	poor	average	average	average	poor
Prospective Students / Admissions	average	average	poor	average	excellent	average
Current Students	below average	poor	poor	above average	average	below average
Curriculum and Courses	below average	poor	poor	excellent	above average	poor
Faculty Directory	average	average	excellent	excellent	above average	excellent
Student Directory	poor	average	poor	below average	poor	poor
Post Graduates and Alumni	below average	below average	poor	poor	excellent	poor
Community Resources	poor	below average	poor	poor	average	below average
News & Events	yes	yes	no	yes	yes	no
Social Media	Facebook	Facebook, Flickr, blog, RSS feed	Facebook	Twitter	Facebook, Twitter, Vimeo, RSS feed	Facebook, Google+, Instagram, LinkedIn, Pinterest Twitter, YouTube
Overall Content Coverage	below average	below average	poor	excellent	above average	below average

* NYU Master's and PhD in Food Studies

^ Tufts Master's and PhD in Agriculture, Food and Environment

	University of Vermont	Johns Hopkins University*	Indiana University^	University of California Davis$	University of California Santa Cruz#	University of Vermont, CDAE
Functionality						
Broken Links	above average	average	excellent	excellent	average	excellent
Spelling & Grammar	average	excellent	excellent	excellent	excellent	above average
Search Box	yes, parent site	yes, parent	yes, parent	yes	yes	yes, parent site
Homepage Load Time: Desktop	3.306s	6.466s	9.918s	14.736s	11.522s	6.220s
Homepage Load Time: Mobile	5.751s	16.964s	28.569s	22.452s	8.495s	18.288s
Mobile Friendly	moderately	no	no	no	no	no
Usability						
Layout Consistency	above average	above average	excellent	above average	above average	below average
Navigation: Organization	excellent	excellent	average	poor	above average	below average
Navigation: Options	excellent	average	above average	above average	below average	average
Navigation: Functionality	above average	excellent	average	average	below average	above average
Navigation: Click-Throughs	above average	poor	excellent	below average	above average	average
Link Labels	excellent	excellent	excellent	above average	excellent	average
Color Contrast	excellent	above average	excellent	excellent	excellent	excellent
Accessibility Problems	0 known 1 likely 177 potential	7 known 0 likely 581 potential	2 known 10 likely 914 potential	8 known 0 likely 219 potential	2 known 0 likely 195 potential	4 known 0 likely 266 potential
Aesthetics						
Layout: Organization	above average	average	excellent	average	average	average
Color Palette	excellent	above average	excellent	above average	above average	excellent
Font	above average	above average	above average	average	above average	above average
Graphics	below average	average	above average	below average	below average	below average
Dynamic Content	no	yes	no	no	yes	yes
Simplicity	average	above average	above average	average	average	below average
Content						
Copy	excellent	average	average	average	below average	average
Regularly Updated	average	poor	average	excellent	average	average
Prospective Students	average	excellent	below average	above average	average	below average
Current Students	below average	excellent	average	below average	below average	average
Curriculum and Courses	below average	poor	below average	below average	average	average
Faculty Directory	average	excellent	above average	below average	average	above average
Student Directory	poor	poor	below average	below average	average	above average
Post Graduates and Alumni	below average	excellent	above average	below average	poor	below average
Community Resources	poor	excellent	poor	below average	poor	average
News & Events	yes	yes	yes	yes	yes	yes
Social Media	Facebook	Facebook, LinkedIn, Twitter, YouTube, RSS feed	Facebook, Instagram, Twitter, YouTube	---	---	Facebook, LinkedIn, Twitter
Overall Content Coverage	below average	above average	above average	below average	average	average

* Johns Hopkins Master's of Public Health

^ Indiana University Master's of Science in Environmental Science

$ UC Davis Master's and PhD in Ecology, Agroecology Concentration

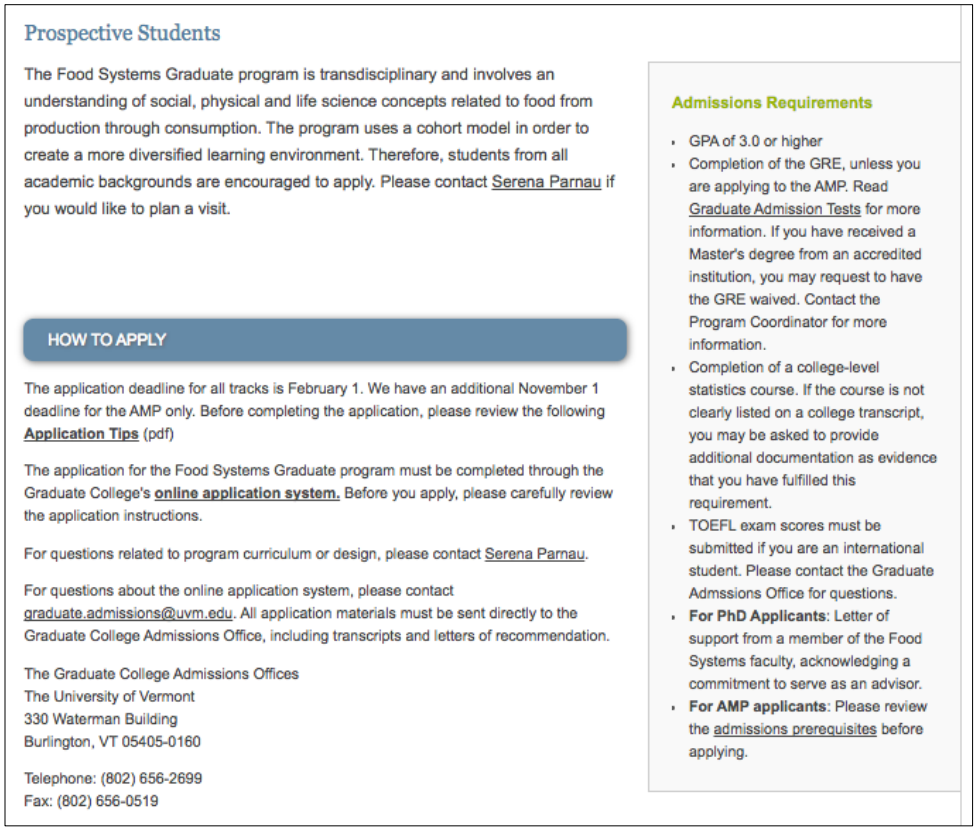
US Santa Cruz PhD in Environmental Studies

prospective student, the current student, the faculty member, the alumni – is minimal. Following are recommendations, based on web design best practices and examples from peer graduate program websites, for seven areas: prospective students; current students; student directory or student profiles; faculty directory or faculty profiles; employment opportunities, career resources, and information for alumni; community resources; and aesthetics.

Prospective Students

Priority: High

One of the most underdeveloped aspects of the current UVM Food Systems Masters Program website is it's role as a recruitment tool for prospective students. At present, the information on the Prospective Students[1] page is minimal: a single paragraph about the program; information from the Graduate School on How to Apply; and Admissions Requirements (Figure 3). Embedded within the text of this page is a link to "Application Tips". When clicking on this link, users are taken to a PDF, "Food Systems Graduate Program Application Guidelines"[2] (Figure 4). The information on this page is crucial to the application process, but is currently buried on a tertiary page.



Prospective Students

The Food Systems Graduate program is transdisciplinary and involves an understanding of social, physical and life science concepts related to food from production through consumption. The program uses a cohort model in order to create a more diversified learning environment. Therefore, students from all academic backgrounds are encouraged to apply. Please contact Serena Parnau if you would like to plan a visit.

HOW TO APPLY

The application deadline for all tracks is February 1. We have an additional November 1 deadline for the AMP only. Before completing the application, please review the following **Application Tips** (pdf)

The application for the Food Systems Graduate program must be completed through the Graduate College's **online application system.** Before you apply, please carefully review the application instructions.

For questions related to program curriculum or design, please contact Serena Parnau.

For questions about the online application system, please contact graduate.admissions@uvm.edu. All application materials must be sent directly to the Graduate College Admissions Office, including transcripts and letters of recommendation.

The Graduate College Admissions Offices
The University of Vermont
330 Waterman Building
Burlington, VT 05405-0160

Telephone: (802) 656-2699
Fax: (802) 656-0519

Admissions Requirements

- GPA of 3.0 or higher
- Completion of the GRE, unless you are applying to the AMP. Read Graduate Admission Tests for more information. If you have received a Master's degree from an accredited institution, you may request to have the GRE waived. Contact the Program Coordinator for more information.
- Completion of a college-level statistics course. If the course is not clearly listed on a college transcript, you may be asked to provide additional documentation as evidence that you have fulfilled this requirement.
- TOEFL exam scores must be submitted if you are an international student. Please contact the Graduate Admssions Office for questions.
- **For PhD Applicants**: Letter of support from a member of the Food Systems faculty, acknowledging a commitment to serve as an advisor.
- **For AMP applicants**: Please review the admissions prerequisites before applying.

Figure 3. UVM Food Systems Prospective Students

[1] http://www.uvm.edu/foodsystemsprogram/?Page=prospectivestudents.html
[2] http://www.uvm.edu/foodsystemsprogram/pdf/FS%20application%20guidelines.pdf

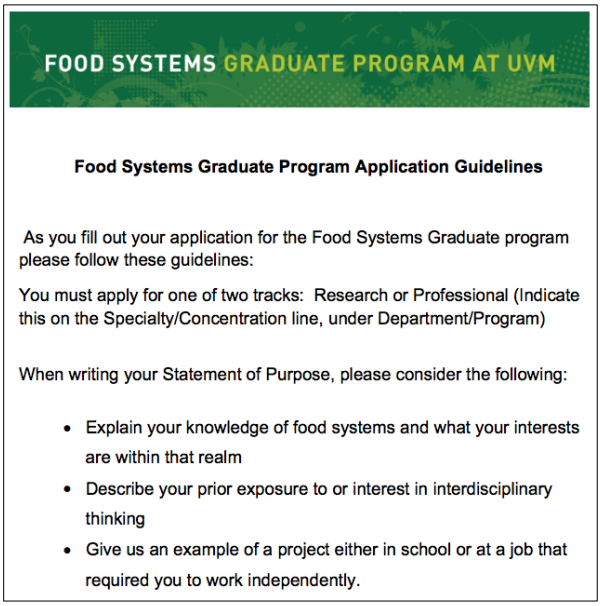


Figure 4. UVM Food Systems Graduate Program Application Guidelines.

Prospective students can also learn more about the MS and PhD program options on the Degree Programs page[3] (Figure 5). From this page, one can navigate to the Accelerated Master's program[4], the Master's program[5], or the PhD program[6]. The information listed on these pages is not parallel or uniform (Table 3).

Additional information for prospective students can be found on the Program Resources page[7], including: questions about Vermont residency; questions about tuition and fees; tuition and fees for graduate students; and student financial services. Likewise, potentially useful information is in the PDF Food Systems Graduate Student Handbook[8].

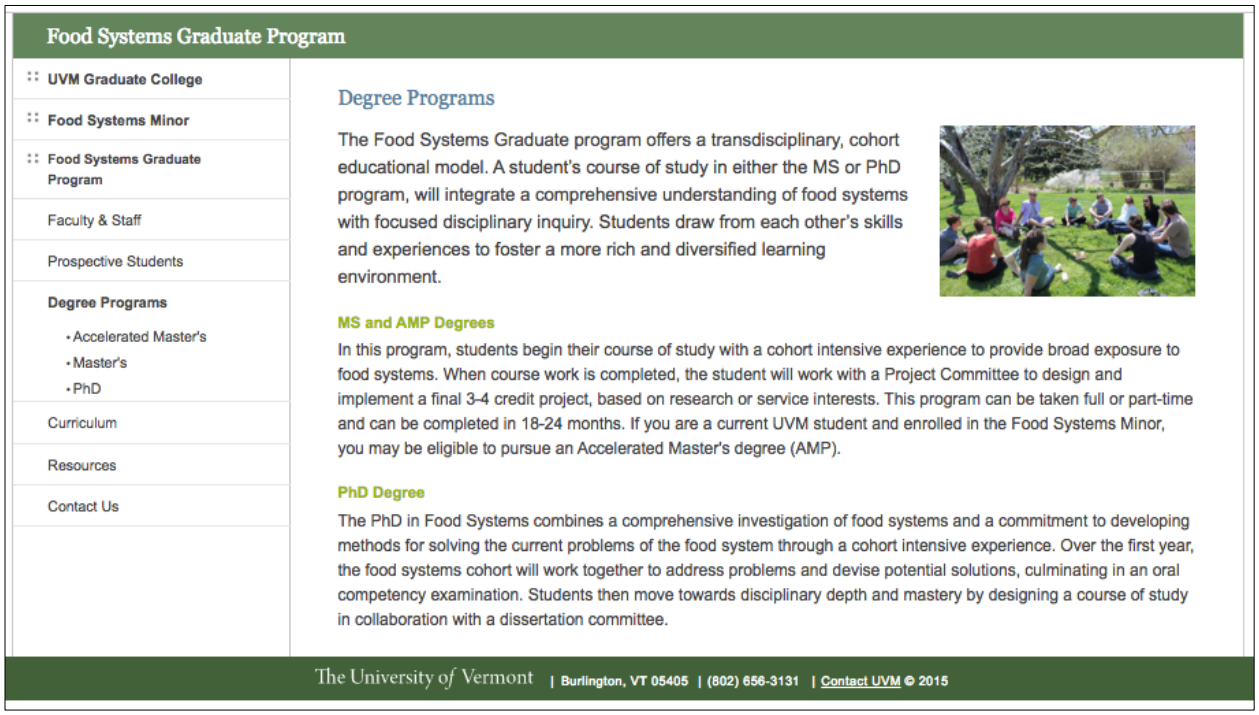


Figure 5. UVM Food Systems Degree Programs

[3] http://www.uvm.edu/foodsystemsprogram/?Page=menu3.html&SM=degreesubmenu.html
[4] http://www.uvm.edu/foodsystemsprogram/?Page=accelerated.html&SM=degreesubmenu.html
[5] http://www.uvm.edu/foodsystemsprogram/?Page=masters.html&SM=degreesubmenu.html
[6] http://www.uvm.edu/foodsystemsprogram/?Page=doctoral.html&SM=degreesubmenu.html
[7] http://www.uvm.edu/foodsystemsprogram/?Page=programresources.html
[8] http://www.uvm.edu/foodsystemsprogram/pdf/Final%202015_handbook.pdf

Table 3. UVM Food Systems Degree Programs Comparison

Accelerated Master's Program	Master's Program	PhD Program
Admission's Prerequisites		Admission
Course of Study	Course of Study	Course of Study
Degree requirements	Degree requirements	Degree requirements
Elective Courses (PDF)	Elective Courses (PDF)	
"Requirements and Expectations for the MS in Food Systems Project" (PDF)	"Requirements and Expectations for the MS in Food Systems Project" (PDF)	
Food Systems Initiative Internship Program (external link)		
	Food Systems Innovation Fellowships (PDF)	
Serena Parnau contact information		

Peer websites offer multiple examples on developed prospective student portals. Johns Hopkins Bloomberg School of Public Health created a portal specifically for prospective students[9] including information about: who should apply; admissions information; student demographics; scholarship information; resources for living in Baltimore; information for international students; and an admissions FAQs (Figure 6). New York University's Master's in Food Studies[10] (Figure 7) and Tuft's University School of Nutrition Science and Policy[11] both include admissions FAQs, with information on admissions; program costs, tuition, and funding; degree requirements and curriculum; student demographics; scheduling campus visits; and information for international students. Chatham University's Master of Arts in Food Studies likewise provides information on Tuition & Fees[12].

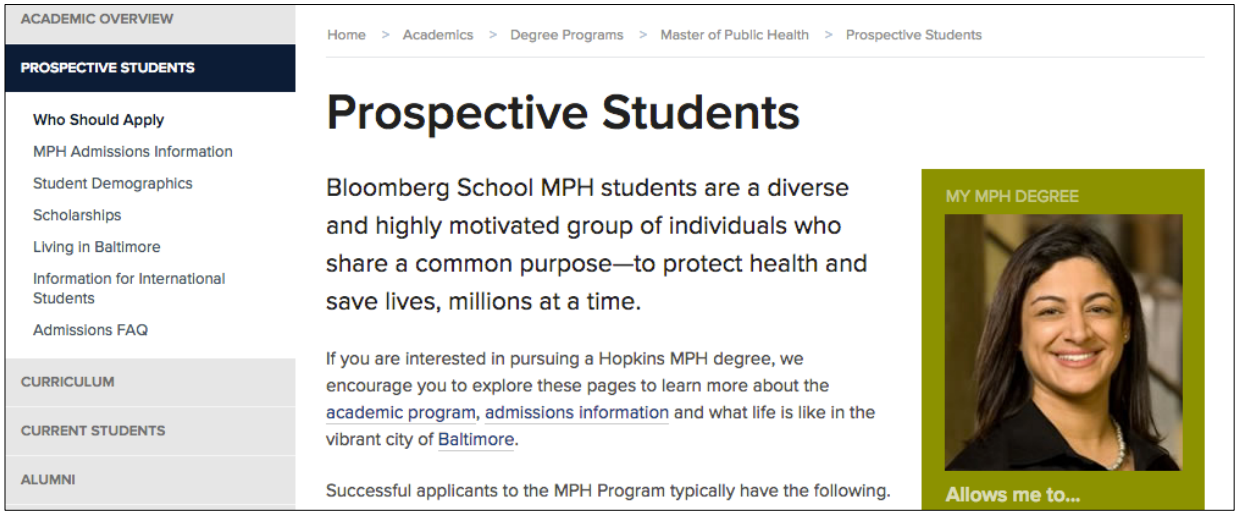


Figure 6. Johns Hopkins Bloomberg School of Public Health Prospective Students

[9] http://www.jhsph.edu/academics/degree-programs/master-of-public-health/prospective-students/
[10] http://steinhardt.nyu.edu/nutrition/food/ma/faq
[11] http://www.nutrition.tufts.edu/faq
[12] http://falk.chatham.edu/mafs/tuition.cfm

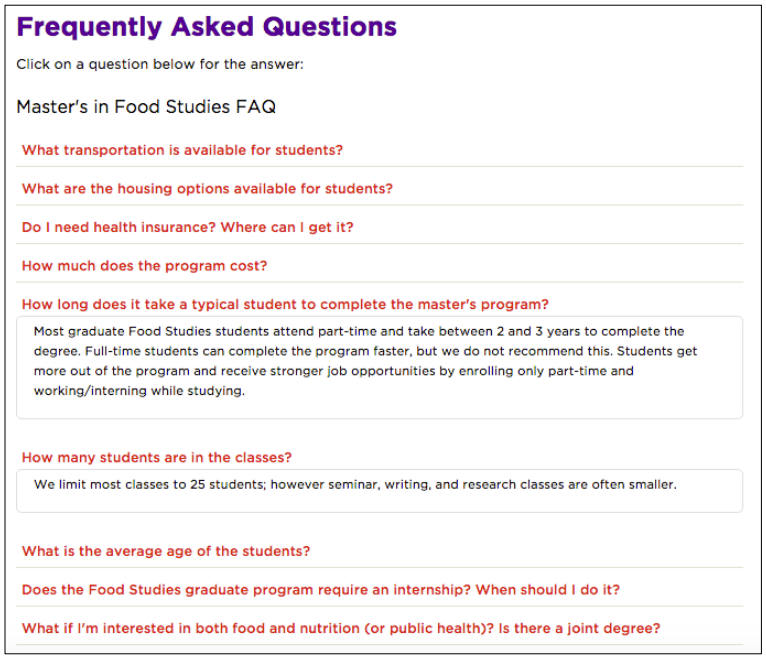


Figure 7. NYU Food Studies' Frequently Asked Questions

Recommendations:

- Migrate content from "Application Tips" PDF document to main content of Prospective Students page.
- Enhance content on cohort model of program.
- Create sub-menus under Prospective Students page for information on: Graduate School online application form, tuition and funding information, application information for international graduate students, and an admissions Frequently Asked Questions.
- Consistent and parallel information across degree program pages, including: application requirements; program and degree requirements; required and elective course descriptions; timeline for degree completion; and professional project, thesis, or dissertation resources.
    - For theses and dissertations: link to Food Systems theses and dissertations in ScholarWorks @ UVM
    - For professional projects: work with UVM Libraries to create a collection in ScholarWorks @ UVM for professional projects; link to collection (for similar, see Public Health Projects: http://scholarworks.uvm.edu/comphp/)

Current Students

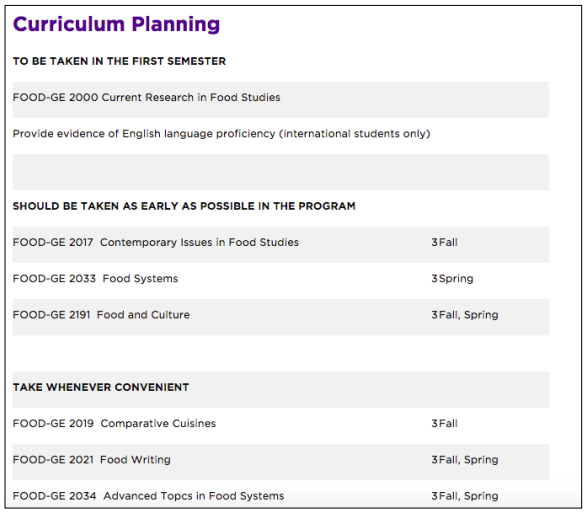
Priority: High

Another area that is in need of development is information for current Food Systems graduate students. The Curriculum page[13] on the website provides information about the fall and spring courses, but does not provide a sense of timing with the coursework. This

[13] http://www.uvm.edu/foodsystemsprogram/?Page=curriculum.html

page also links to a PDF of potential elective courses[14] but does not provide information beyond title, department, course number, credits, term, and past instructors. Under Degree Programs[15], total credits and total degree requirements are listed, but not uniformly or with distinct clarity. Information about the professional project requirements are found both as a PDF on the MS Food Systems page[16] and in the Food Systems Program Handbook[17] listed under the Resources page[18]; information about the thesis is listed in the Food Systems Program Handbook and as a link on the Resources page. No information about the dissertation has been developed for the website.

NYU's Food Studies Master's Program provides a comprehensive page on Curriculum Planning[19], indicating when courses should be taken in the graduate sequence (Figure 8). Likewise, the University of California Santa Cruz provides a progression of courses for first year graduate students[20] (Figure 9) with detailed course information. In addition to course information, some of the peer program websites include links to their programs' theses and dissertations, such as Indiana University's School of Public and Environmental Affairs[21].

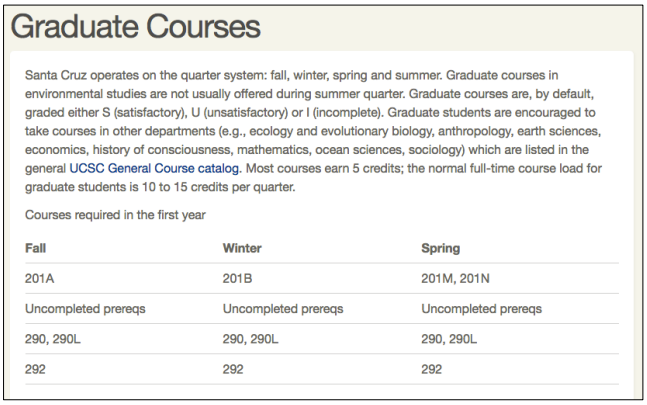


Curriculum Planning

TO BE TAKEN IN THE FIRST SEMESTER

FOOD-GE 2000 Current Research in Food Studies	
Provide evidence of English language proficiency (international students only)	
SHOULD BE TAKEN AS EARLY AS POSSIBLE IN THE PROGRAM	
FOOD-GE 2017 Contemporary Issues in Food Studies	3 Fall
FOOD-GE 2033 Food Systems	3 Spring
FOOD-GE 2191 Food and Culture	3 Fall, Spring
TAKE WHENEVER CONVENIENT	
FOOD-GE 2019 Comparative Cuisines	3 Fall
FOOD-GE 2021 Food Writing	3 Fall, Spring
FOOD-GE 2034 Advanced Topcs in Food Systems	3 Fall, Spring

Figure 8. NYU Food Studies Curriculum Planning



Graduate Courses

Santa Cruz operates on the quarter system: fall, winter, spring and summer. Graduate courses in environmental studies are not usually offered during summer quarter. Graduate courses are, by default, graded either S (satisfactory), U (unsatisfactory) or I (incomplete). Graduate students are encouraged to take courses in other departments (e.g., ecology and evolutionary biology, anthropology, earth sciences, economics, history of consciousness, mathematics, ocean sciences, sociology) which are listed in the general UCSC General Course catalog. Most courses earn 5 credits; the normal full-time course load for graduate students is 10 to 15 credits per quarter.

Courses required in the first year

Fall	Winter	Spring
201A	201B	201M, 201N
Uncompleted prereqs	Uncompleted prereqs	Uncompleted prereqs
290, 290L	290, 290L	290, 290L
292	292	292

Figure 9. USCS Environmental Studies Graduate Courses

Beyond curricular needs, graduate students have other information needs. On the UVM Resources page[22], links to student resources include: questions about Vermont residency; questions about tuition and fees; graduate student ombudsman; tuition and fees for graduate students; student financial services; billing dates and due dates; common UVM billing codes and definitions; and thesis/dissertation instructions and forms. The Food Systems Program Handbook[23] provides additional information, including academics; course selection, registration, and adding, dropping, and withdrawing from courses; health

[14] http://www.uvm.edu/foodsystemsprogram/pdf/FS%20relevant%20courses.pdf
[15] http://www.uvm.edu/foodsystemsprogram/?Page=menu3.html&SM=degreesubmenu.html
[16] http://www.uvm.edu/foodsystemsprogram/pdf/msprojectdescription.pdf
[17] http://www.uvm.edu/foodsystemsprogram/pdf/Final%202015_handbook.pdf
[18] http://www.uvm.edu/foodsystemsprogram/?Page=programresources.html
[19] http://steinhardt.nyu.edu/nutrition/food/ma/curriculum/planning
[20] http://envs.ucsc.edu/graduate/requirements/gradcourses.html
[21] https://spea.indiana.edu/doctoral/dissertations.html
[22] http://www.uvm.edu/foodsystemsprogram/?Page=programresources.html
[23] http://www.uvm.edu/foodsystemsprogram/pdf/Final%202015_handbook.pdf

insurance and summer employment; funding and financial information; and other logistical information. The dispersion of this information across the website and in the PDF handbook make it difficult for students to quickly and easily locate the information they need.

Several peer websites have created current student portal pages that collate this information in a single location. Tufts University created a Student Life page[24] (Figure 10), with links to academic resources, financial resources, campus life resources, and career services.

Figure 10. Tufts University School of Nutrition Science and Policy Student Life

Recommendations:

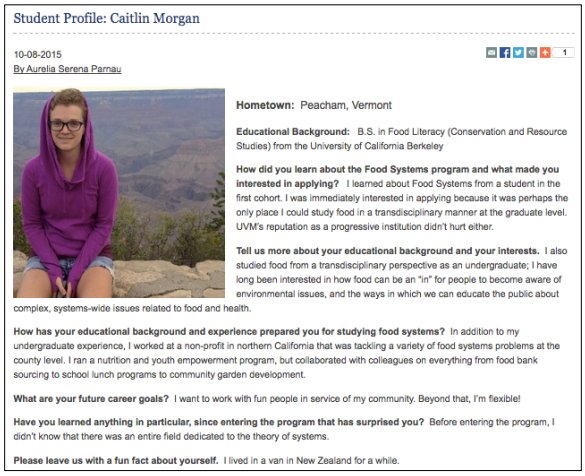
- Create separate Current Students page
- Create a Student Directory page, with graduate student profiles
- Migrate content from Curriculum page to Current Students page and clean up copy
    - Create visual map of first-year curriculum (First Year Fall Courses, First Year Spring Courses, First Year Summer Courses) (see: Course of Study in Food Systems Handbook)
    - Provide detailed information on Travel Immersion requirements and applicable fees
    - Develop and maintain a dynamic list of elective courses with course descriptions
- Migrate and clean up content from Student Resources page, including link to Food Systems Graduate Program Handbook
    - Review content in Handbook and migrate necessary content to website; potential content includes advisors and advising, graduate student status, health insurance, financial aid, and summer employment

[24] http://www.nutrition.tufts.edu/student

- Create pages for to professional project, thesis, or dissertations
    - For theses and dissertations: link to Food Systems theses and dissertations in ScholarWorks @ UVM
    - For professional projects: work with UVM Libraries to create a collection in ScholarWorks @ UVM for professional projects; link to collection (for similar, see Public Health Projects: http://scholarworks.uvm.edu/comphp/)
- Create Employment Opportunities/Career Services/Resources for Alumni page
    - Migrate and expand Career Opportunities for Food Systems Graduates content (Resources page)
    - Create and maintain dynamic database of current employment and internship opportunities

Student Directory/Student Profiles

Priority: Medium-High



Student Profile: Caitlin Morgan

10-08-2015

By Aurelia Serena Parnau

Hometown: Peacham, Vermont

Educational Background: B.S. in Food Literacy (Conservation and Resource Studies) from the University of California Berkeley

How did you learn about the Food Systems program and what made you interested in applying? I learned about Food Systems from a student in the first cohort. I was immediately interested in applying because it was perhaps the only place I could study food in a transdisciplinary manner at the graduate level. UVM's reputation as a progressive institution didn't hurt either.

Tell us more about your educational background and your interests. I also studied food from a transdisciplinary perspective as an undergraduate; I have long been interested in how food can be an "in" for people to become aware of environmental issues, and the ways in which we can educate the public about complex, systems-wide issues related to food and health.

How has your educational background and experience prepared you for studying food systems? In addition to my undergraduate experience, I worked at a non-profit in northern California that was tackling a variety of food systems problems at the county level. I ran a nutrition and youth empowerment program, but collaborated with colleagues on everything from food bank sourcing to school lunch programs to community garden development.

What are your future career goals? I want to work with fun people in service of my community. Beyond that, I'm flexible!

Have you learned anything in particular, since entering the program that has surprised you? Before entering the program, I didn't know that there was an entire field dedicated to the theory of systems.

Please leave us with a fun fact about yourself. I lived in a van in New Zealand for a while.

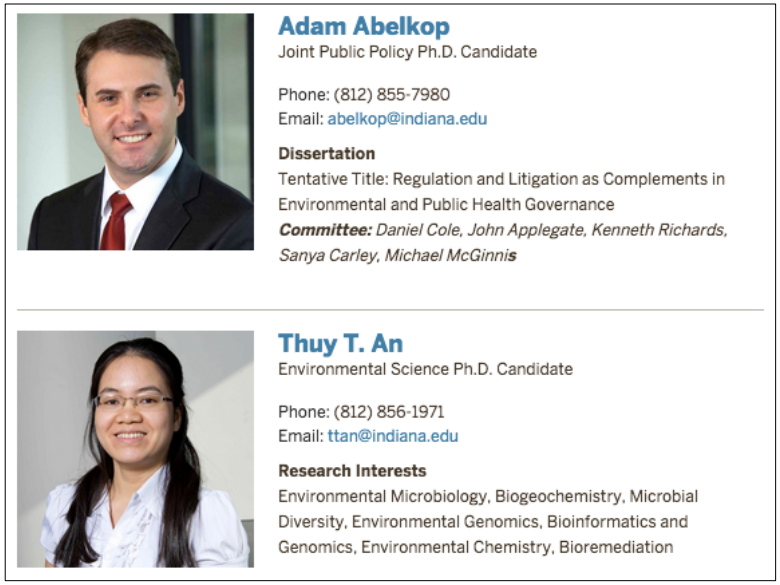
Figure 11. UVM Food Systems Student Profile

A student directory and/or student profiles appeared on half of the peer program websites. Directories are important to help faculty connect with students, and students to connect with other students. It also creates a professional online presence for students, highlighting their specific knowledge or skills; this is especially important for students on the job market.

The UVM Food Systems Masters Program website has occasional student profiles (Figure 11), but it is part of the blog-powered News feed; there are no permanent links to student profiles, and not all students are profiled.

Several of the peer program websites provide different ways of presenting student directories and profiles. For it's doctoral students, the Indiana University Bloomington School of Public and Environmental Affairs created profiles[25] that included name, degree, contact information, dissertation title and dissertation committee members, or research interests (Figure 12). The Graduate Directory[26] for the University of California Santa Cruz's Environmental Studies program is similar in that it included name, department, contact information, website, and office location (Figure 13). The UVM Community Development and Applied Economics (CDAE) Master's program[27] presents a different profile: name, education, areas of interest, contact information, and short narrative biography (Figure 14).

[25] https://spea.indiana.edu/doctoral/student-profiles/index.html
[26] http://envs.ucsc.edu/about/grad-directory.php
[27] http://www.uvm.edu/cdae/ms/?Page=gradstudents.php



Adam Abelkop
Joint Public Policy Ph.D. Candidate

Phone: (812) 855-7980
Email: abelkop@indiana.edu

Dissertation
Tentative Title: Regulation and Litigation as Complements in Environmental and Public Health Governance
Committee: *Daniel Cole, John Applegate, Kenneth Richards, Sanya Carley, Michael McGinnis*

Thuy T. An
Environmental Science Ph.D. Candidate

Phone: (812) 856-1971
Email: ttan@indiana.edu

Research Interests
Environmental Microbiology, Biogeochemistry, Microbial Diversity, Environmental Genomics, Bioinformatics and Genomics, Environmental Chemistry, Bioremediation

Figure 12. IU School of Public and Environmental Affairs Student Profiles

Jenna Banning
MS Candidate

- B.A. 2009 International Studies, Dickinson College

Areas of Interest:
sustainable food systems, community gardens, school gardens, public relations

Contact Information
Office: *207 Morrill Hall*
Email: *Jenna Banning*

After graduating from Dickinson College in 2010, Jenna served for a year as a Public Allies, AmeriCorps member, working with Healthy Foods for Healthy Kids, a farm-to-school non-profit in Delaware. The experience brought together Jenna's interests in healthy foods, sustainability, and development, and inspired her to pursue further knowledge in the field from many different perspectives: researcher (World Watch Institute); restaurant service (Founding Farmers); international aid programs (USAID); farmer (Solstice Farm); and most recently, writer (edible South Shore). Jenna is now excited to be bringing together these experiences at CDAE, where she is focusing on sustainable food systems.

Figure 13. UVM Community Development and Applied Economics Graduate Student Directory

Monika Egerer

Title	Graduate Student
Department	Environmental Studies Department
Phone	(734) 775 8950
Email	megerer@ucsc.edu
Web Site	Philpott Lab Website
Office	NS2 489
Office Hours	Spring: Th, 9 - 11 AM

Figure 14. UCSC Environmental Studies Graduate Director

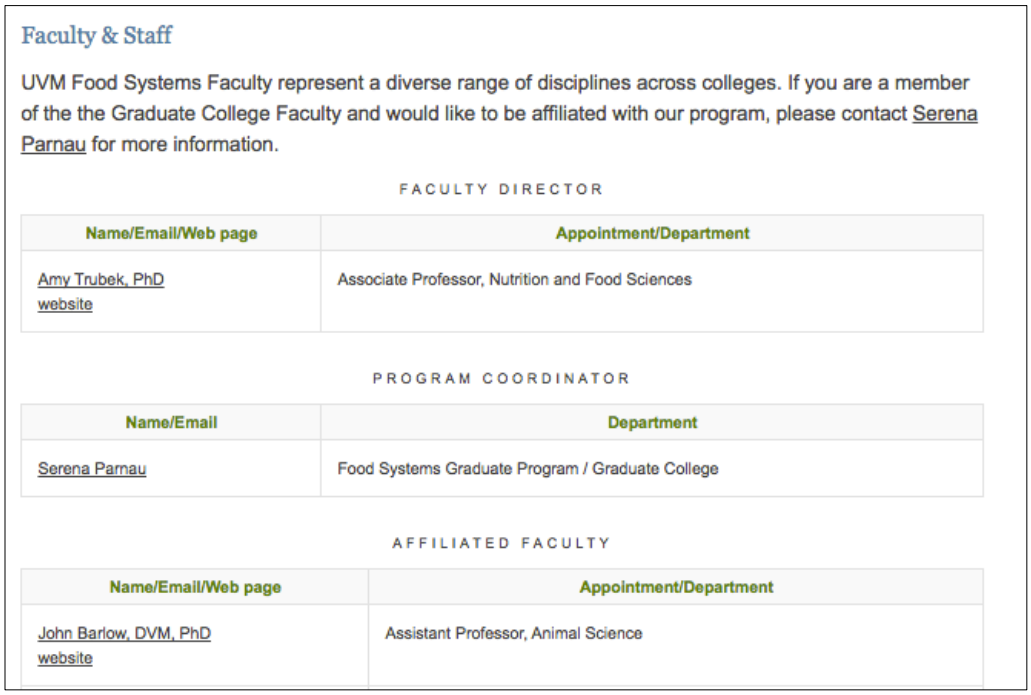
Recommendations:

- Create a Student Directory page, with graduate student profiles that includes at minimum profile pictures, contact information, and research areas.

Faculty Directory/Faculty Profiles

Priority: Medium-High

Faculty directories are common across peer program websites. Well-developed faculty directories and profiles are a crucial recruitment tool for prospective students, highlighting the research interests and areas of specialization for potential faculty advisors. They also provide points of contact for both prospective and current students. The UVM Food Systems Masters Program website has a bare-bones faculty directory[28] (Figure 15), which includes name, email, title, and website of the faculty member; profiles are accessible for most, but not all faculty, through a tertiary link to external (e.g. departmental) websites.



Faculty & Staff

UVM Food Systems Faculty represent a diverse range of disciplines across colleges. If you are a member of the the Graduate College Faculty and would like to be affiliated with our program, please contact Serena Parnau for more information.

FACULTY DIRECTOR

Name/Email/Web page	Appointment/Department
Amy Trubek, PhD website	Associate Professor, Nutrition and Food Sciences

PROGRAM COORDINATOR

Name/Email	Department
Serena Parnau	Food Systems Graduate Program / Graduate College

AFFILIATED FACULTY

Name/Email/Web page	Appointment/Department
John Barlow, DVM, PhD website	Assistant Professor, Animal Science

Figure 15. UVM Food Systems Faculty & Staff Directory

In comparison, a more stylized directory can be seen on NYU's Department of Nutrition, Food Studies, and Public Health website[29] (Figure 16); the names are hyperlinked to more detailed faculty profiles. The Indiana University Bloomington School of Public and Environmental Affairs created hybrid directory/profiles page[30] (Figure 17) with faculty profile pictures, contact information, and research areas of interest.

[28] http://www.uvm.edu/foodsystemsprogram/?Page=directory.html&SM=pfsubmenu.html
[29] http://steinhardt.nyu.edu/nutrition/faculty/departments/Nutrition%2C_Food_Studies%2C_and_Public_Health
[30] https://spea.indiana.edu/faculty-research/directory/index.html

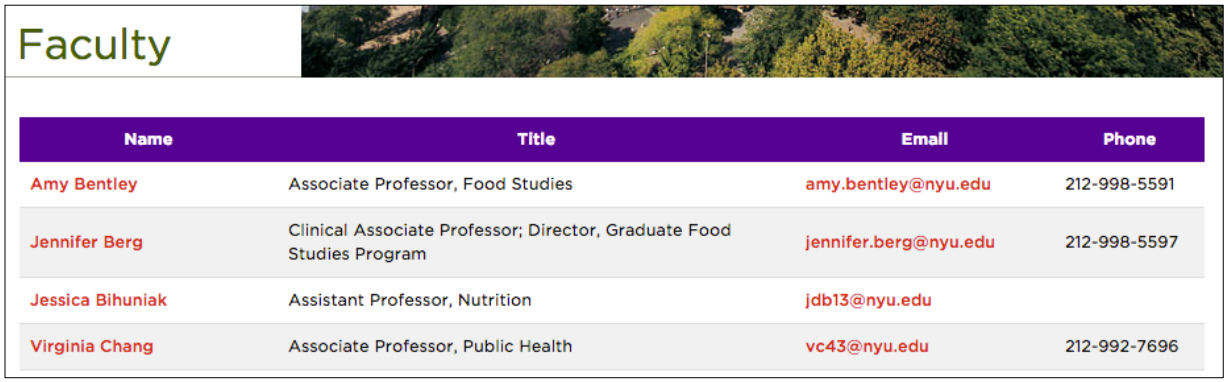


Figure 16. NYU Department of Nutrition, Food Studies, and Public Health Faculty Directory

Figure 17. IU School of Public and Environmental Affairs Faculty Directory

Other peer institution websites include more detailed and robust faculty profiles, often including profile pictures, a short biography, research areas of interest, education, publications, courses taught, and awards. Two notable examples include Green Mountain College's Master of Science in Sustainable Food Systems[31] (Figure 18) and Chatham University[32] (Figure 19). Tangentially related, Johns Hopkins University[33], Indiana University[34] (Figure 20), and the University of British Columbia[35] provide links to research areas, research groups, and research centers, which cross-link with affiliated faculty profiles.

[31] http://www.greenmtn.edu/academics/graduate/msfs/
[32] http://falk.chatham.edu/mafs/faculty.cfm
[33] http://www.jhsph.edu/research/
[34] https://spea.indiana.edu/faculty-research/research/index.html
[35] http://www.landfood.ubc.ca/academics/graduate/islfs/

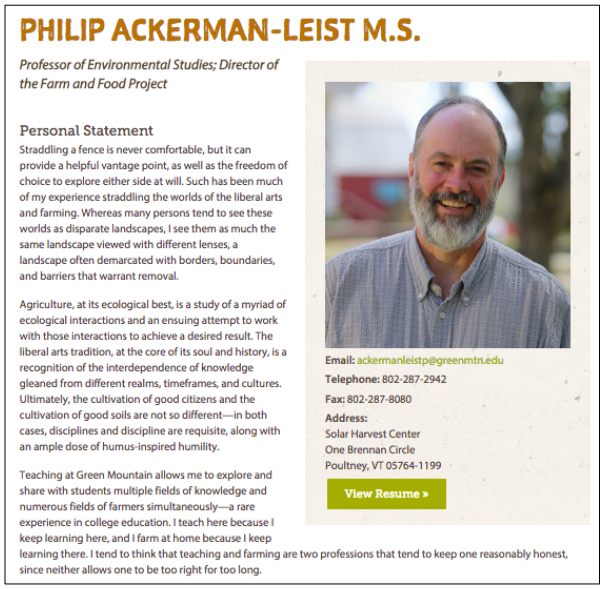


Figure 18. Green Mountain College's Faculty Profile

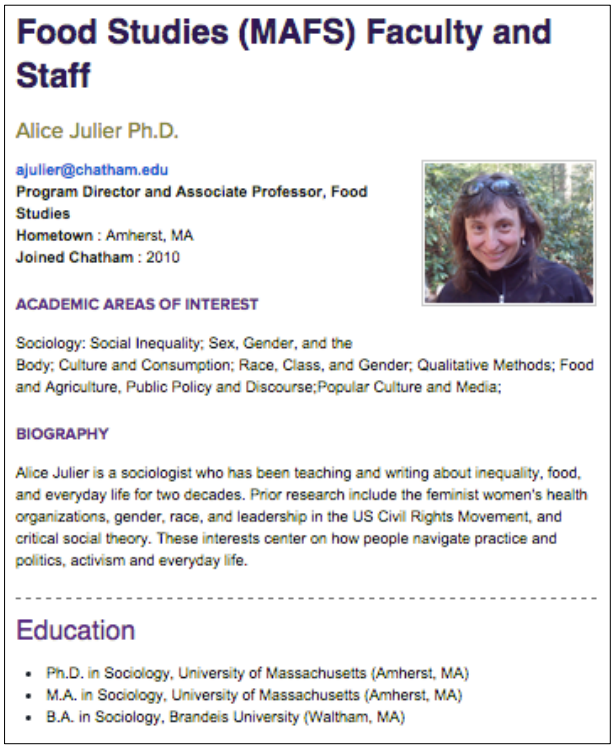


Figure 19. Chatham University Faculty Profile

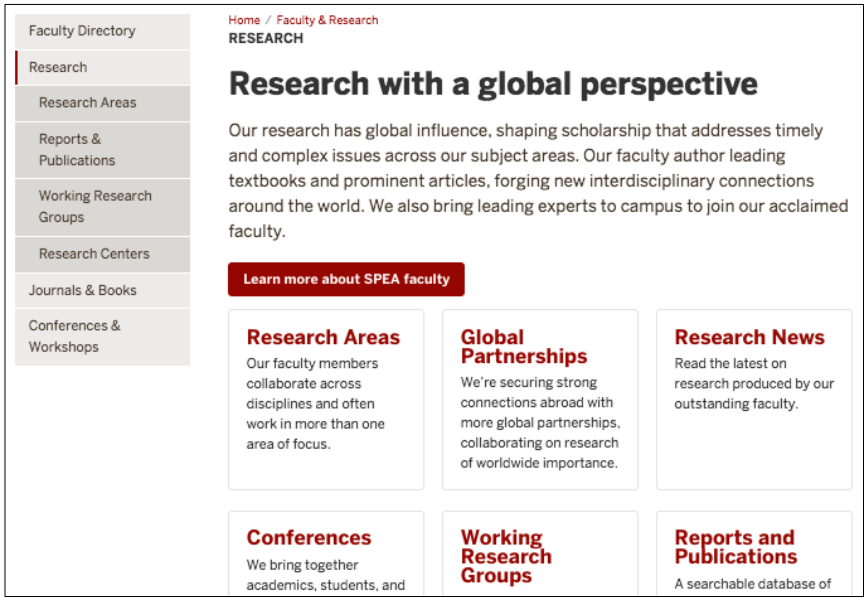


Figure 20. IU School of Public and Environmental Affairs Research

Recommendations:

- Enhance directory page with a template for faculty profile information, that includes at minimum profile pictures, contact information, and research areas

- Remove link to Faculty Bookshelf; this label implies books written by faculty, not books recommended by faculty
    - Include recommendations in faculty profile information
- Link to UVM Food Systems Initiative in main navigation menu

Employment Opportunities, Career Services, Resources for Alumni

Priority: Medium

A small number of peer program websites offered specific information about postgraduate employment and career services for students and alumni. As food systems is an emerging field, helping potential students understand the range of opportunities available to them as graduates of this program remains a critical selling point for recruitment; students want to know that their investment in this degree will make them more marketable in the workforce. Current students and alumni would significantly benefit from access to relevant job postings, internships, or other career opportunities.

Currently, the UVM Food Systems Masters Program website has limited information about postgraduate employment under its Program Resources menu[36] (Figure 21); included are referrals to other websites and listservs with job postings.

Career Opportunities for Food Systems Graduates

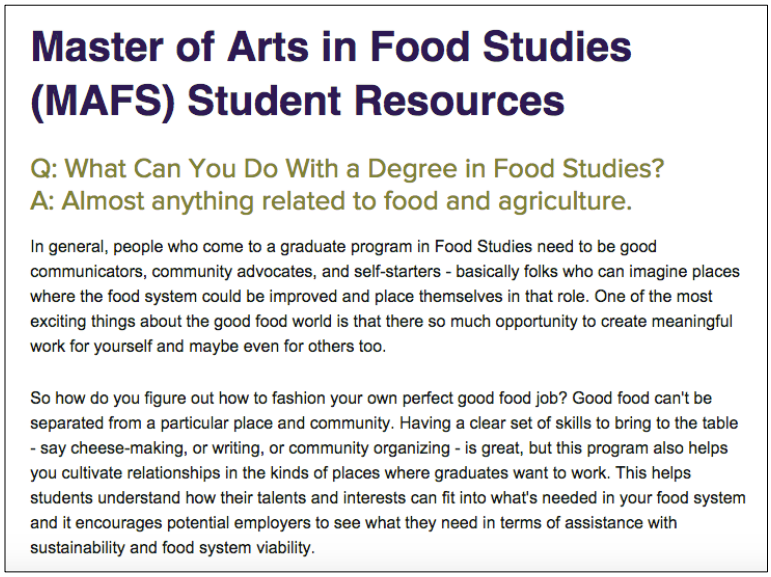
Career paths in food systems are varied and can include work in advocacy and policy, entrepreneurship, community development, education, agriculture, food distribution, cooking, writing, and marketing. Below is a list of resources to help launch your job, fellowship or internship search.

- Subscribe to the Tufts University comfood jobs listserv for job, fellowship and internship postings across the country.
- Good Food Jobs is also great for nationwide job postings. And, if you are wondering what field is best for you, the site provides career profiles and video blogs of professionals in a variety of food systems job fields.
- Civil Eats is a daily news source for critical thought about the American food system. They also provide an expansive list of organizations that are working to improve the food system.
- Grace News offers a guide for jobs in food sustainability on their EcoCentric blog site.
- Looking to stay in Vermont? Check out the Farm to Plate job listings site. And, if you want to keep up-to-date on innovative food systems work in Vermont, visit the Vermont Sustainable Jobs Fund website.

Figure 21. UVM Food Systems Career Opportunities for Food Systems Graduates

At one end of the spectrum with peer comparators, the Indiana University Bloomington's School of Public and Environmental Affairs provides an entire Career Development hub[37], with information on careers, jobs and internships, events and programs, and alumni resources. At the other end of the spectrum, Chatham University provides a Frequently Asked Questions (FAQ), which gives a detailed response to the question, "What can you do with a degree in food studies?"[38] (Figure 22).

[36] http://www.uvm.edu/foodsystemsprogram/?Page=programresources.html
[37] https://spea.indiana.edu/career-development/index.html
[38] http://falk.chatham.edu/mafs/resources.cfm



Master of Arts in Food Studies (MAFS) Student Resources

Q: What Can You Do With a Degree in Food Studies?
A: Almost anything related to food and agriculture.

In general, people who come to a graduate program in Food Studies need to be good communicators, community advocates, and self-starters - basically folks who can imagine places where the food system could be improved and place themselves in that role. One of the most exciting things about the good food world is that there so much opportunity to create meaningful work for yourself and maybe even for others too.

So how do you figure out how to fashion your own perfect good food job? Good food can't be separated from a particular place and community. Having a clear set of skills to bring to the table - say cheese-making, or writing, or community organizing - is great, but this program also helps you cultivate relationships in the kinds of places where graduates want to work. This helps students understand how their talents and interests can fit into what's needed in your food system and it encourages potential employers to see what they need in terms of assistance with sustainability and food system viability.

Figure 22. Chatham University Food Studies Student Resources

Recommendations:

- Create Employment Opportunities/Career Services/Resources for Alumni page
  - Migrate and expand Career Opportunities for Food Systems Graduates content (Resources page)
  - Create and maintain dynamic database of current employment and internship opportunities
  - Link to UVM Food Systems Internship Program (https://www.uvm.edu/foodsystems/?Page=internprogram.html&SM=programmenu.html)
  - Link to UVM Career Center (http://www.uvm.edu/~career/)

Community Resources

Priority: Medium-Low

At present the UVM Food Systems Masters Program website provides no information for or about community members or non-students: resources, research initiatives, community partners, events, etc. This is typical – most peer websites do not offer such resources. In UVM's case, it is notable that there is no link to the UVM Food Systems Research Initiative on the graduate program webpage, interlinking related Food Systems work at UVM.

For peer websites that do provide information for external audiences, there is significant variety in the content provided. Chatham University includes a form for visitors to sign-up for Food Studies News and Events[39], as well as links to sustainability partners and resources[40]. Similarly, the University of British Columbia's Integrated Studies in Land & Food Systems website includes links to campus and community partners[41]. Tufts University

[39] http://falk.chatham.edu/mafs/signup.cfm
[40] http://falk.chatham.edu/mafs/partners.cfm
[41] http://www.landfood.ubc.ca/academics/graduate/islfs/

School of Nutrition Science and Policy has a Nutrition Resources page[42], which includes links to publications, issues affecting the local and global communities, and continuing education opportunities. Similarly, the Johns Hopkins Bloomberg School of Public Health has a portal for public health professionals[43], which includes news, lecture series, training and seminars, continuing education opportunities, and career information.

Recommendation:

- Link to UVM Food Systems Initiative in main navigation menu

Aesthetics

Priority: Medium-Low

The aesthetics of the UVM Food Systems Masters Program website are pleasing and simple (Figure 23). The color palette and font selections are cohesive, the layout is balanced, and there is a nice ratio of white space to content. The graphics used on the website are generally high quality, but their use is infrequent and not always related to the content.

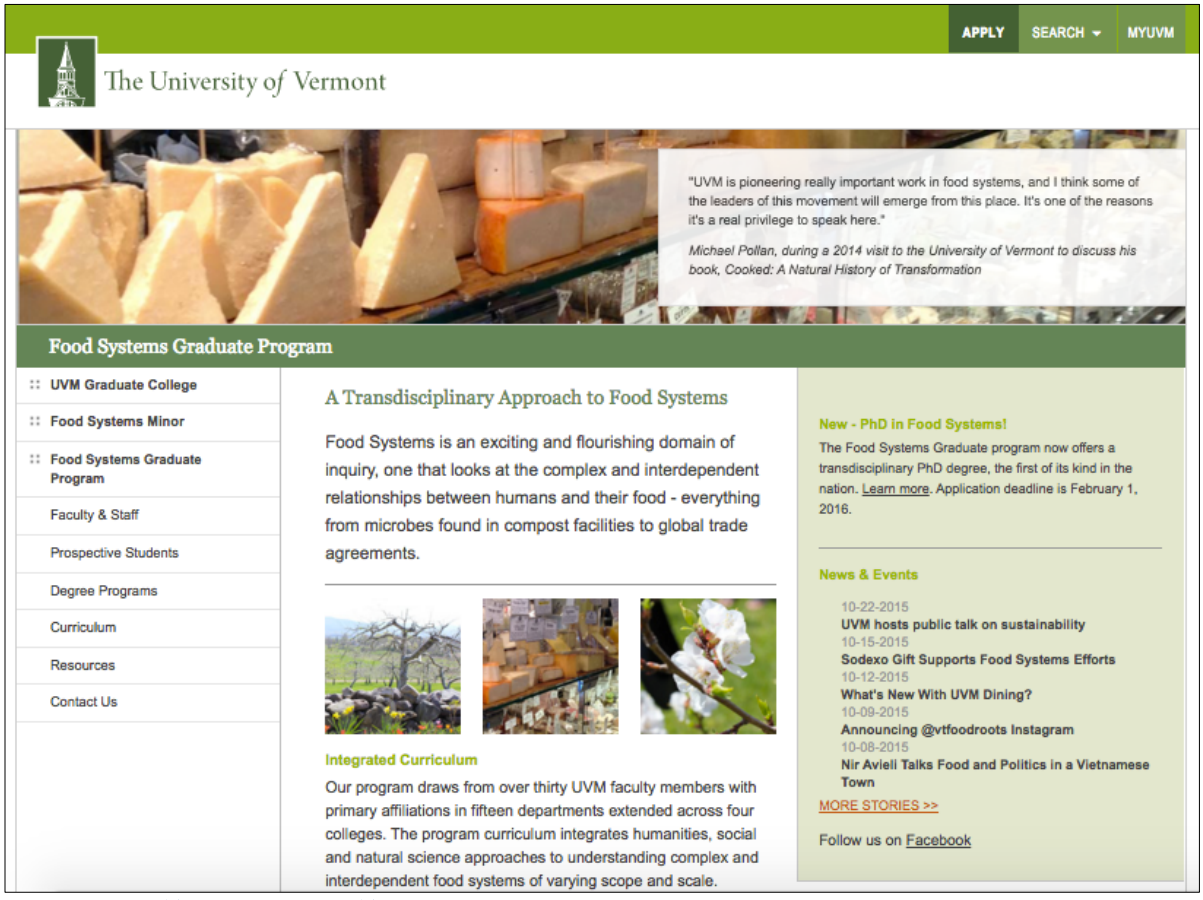


Figure 23. UVM Food Systems Masters Program homepage

[42] http://www.nutrition.tufts.edu/about/nutrition-resources
[43] http://www.jhsph.edu/public-health-professionals/

Dynamic content, either in the form of text or images, is regularly employed on peer websites to create a more visually appealing and engaging website. Johns Hopkins Bloomberg School of Public Health[44], the University of California Santa Cruz Environmental Studies[45], and the University of California Davis Graduate Group in Ecology[46] all embedded a visual slideshow of news stories and events on their homepages.

As more content is added to the website, it will be important for the website to maintain its balance for usability. For inspiration, the Johns Hopkins website[47] is well balanced between being informative and visually appealing (Figure 24). In contrast, the UVM Department of Community Development and Applied Economics[48] (Figure 25) and the Tufts University School of Nutrition and Science Policy[49] (Figure 26) provide excessive information that becomes visually overwhelming.

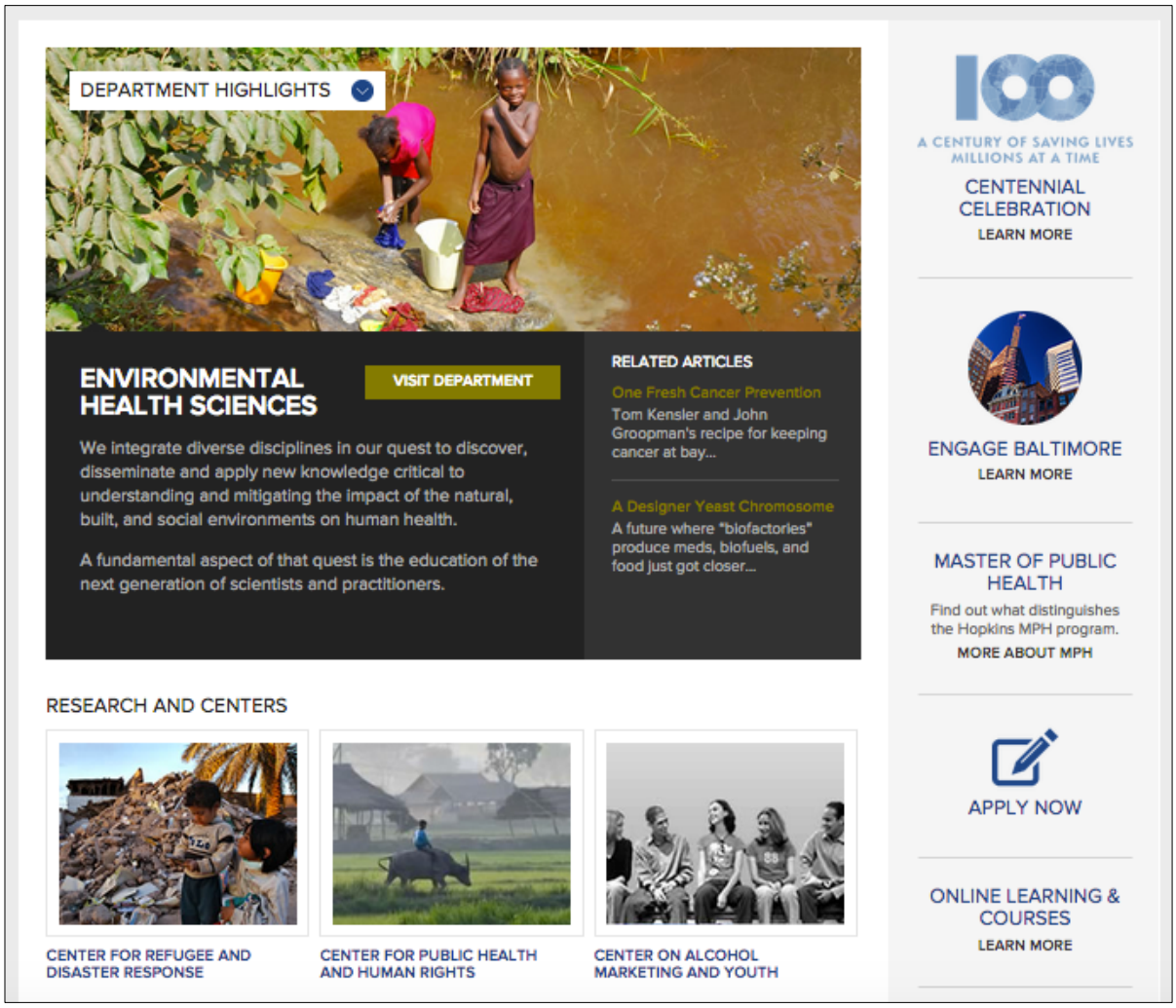


Figure 24. Johns Hopkins Bloomberg School of Public Health homepage

[44] http://www.jhsph.edu/
[45] http://envs.ucsc.edu/
[46] http://ecology.ucdavis.edu/
[47] http://www.jhsph.edu/
[48] http://www.uvm.edu/cdae/ms/
[49] http://www.nutrition.tufts.edu/academics/afe

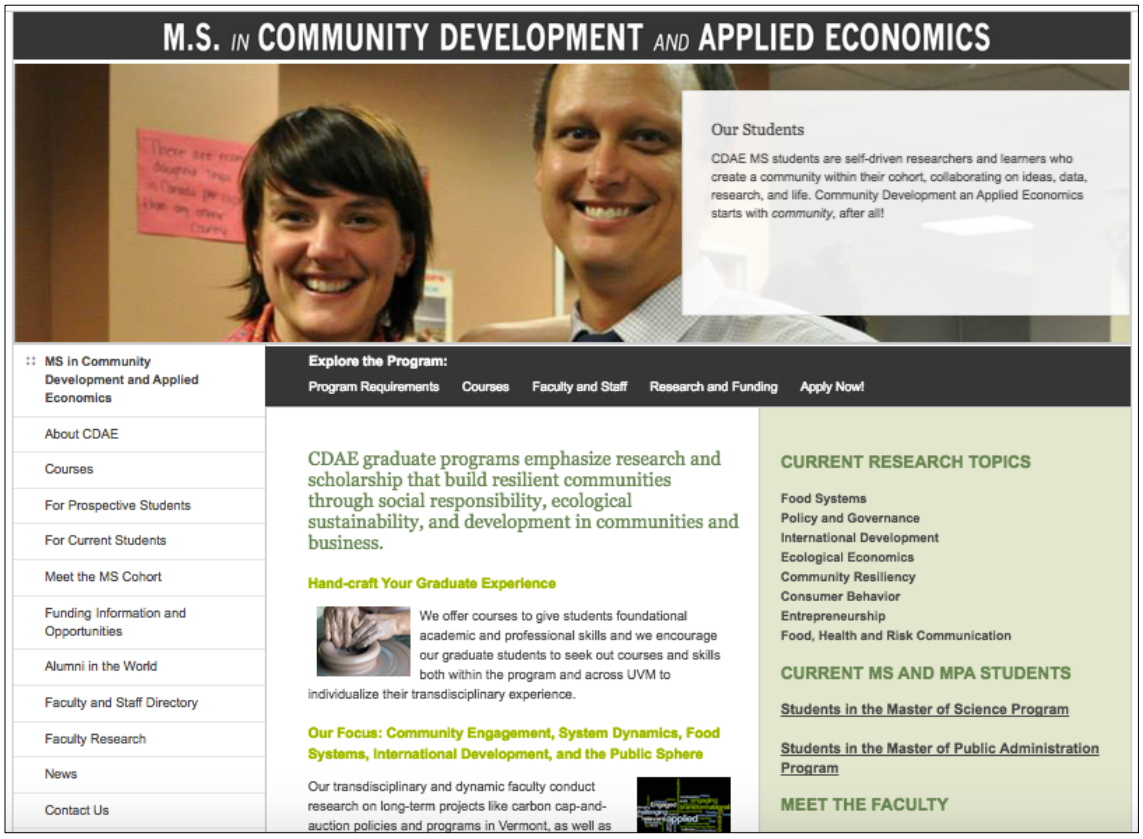


Figure 25. UVM M.S. in Community Development and Applied Economics homepage

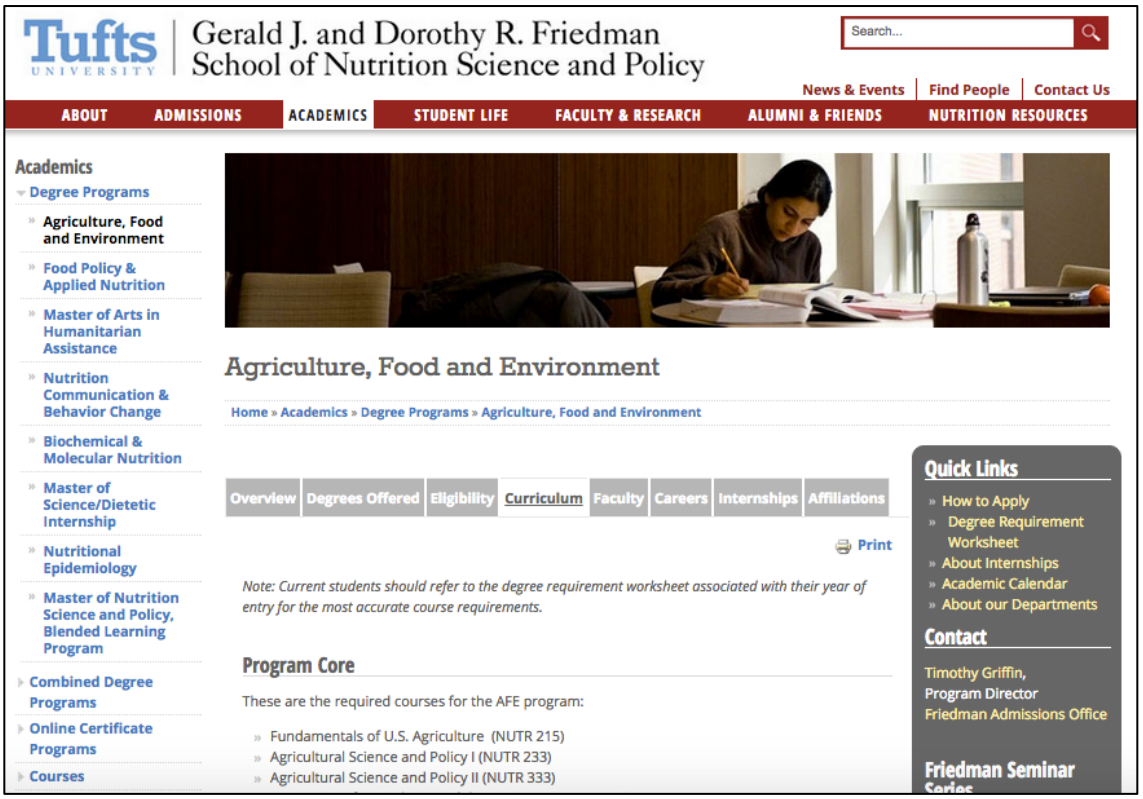


Figure 26. Tufts University Agriculture, Food and Environment Curriculum

UVM Food Systems Initiative Website: Content Analysis

Food Systems Initiative, University of Vermont

The UVM Food Systems Initiative website (https://www.uvm.edu/foodsystems/) is a portal to research, teaching, and outreach efforts related to food systems at the University of Vermont. The website provides information on the mission of the Food Systems Initiative; a directory of staff and affiliated researchers; research areas and related publications; educational opportunities, including co-curricular activities; and news and events, including the annual Food Systems Summit.

Purposeful Sample Selection

The UVM Food Systems Initiative website was benchmarked against a purposeful sample of higher education research centers focused at the intersection of food systems, agriculture, sustainability, social justice, and public health (Table 4). These 11 higher education research centers were evaluated using the rubric found in Appendix F. Results of the evaluation can be found in Table 5.

Strengths

In the analysis across the four dimensions, the UVM Food Systems Initiative website performed well in terms of functionality. The website covers a broad content area, linking together many facets of food systems-related activities at the University of Vermont, including descriptions of current research projects, diversity of academic programs, related research facilities, and integrated social media as a means for outreach.

Weaknesses

While the website does a good job pulling together disparate information across a variety of topics, its weaknesses currently outweigh its strengths. Following are recommendations, based on web design best practices and examples from peer higher education research center websites, for six areas: food systems definition; research, projects, and publications; homepage; people; navigation; and continuing education and for students.

Food Systems Defined

Priority: High

The UVM Food Systems Research Initiative website provides context to the mission and values of the research initiative on the About[50] page, buried under the fold:

[50] http://www.uvm.edu/foodsystems/?Page=about.html&SM=aboutmenu.html

Table 4. UVM Food Systems Initiative Peer Websites

Program	URL	Description/Mission/About
Food Systems Initiative, University of Vermont	https://www.uvm.edu/foodsystems/	UVM's Food Systems Initiative is a cross-campus, transdisciplinary effort to promote research, teaching, and outreach on the most pressing agricultural and food issues of today.
Cornell International Institute for Food, Agriculture and Development (CIIFAD), Cornell University	http://ciifad.cals.cornell.edu/	To support and enhance Cornell's aspirations to be a global land grant university that improves the lives of the poor through the development of sustainable food systems. To strengthen the Cornell community's capacity for making significant contributions to sustainable global development by supporting multi-disciplinary research with a problem-solving focus, partnering with developing country institutions, and facilitating campus-wide dialogue on critical development issues.
Leopold Center for Sustainable Agriculture, Iowa State University	http://www.leopold.iastate.edu/	The Leopold Center for Sustainable Agriculture explores and cultivates alternatives that secure healthier people and landscapes in Iowa and the nation.
Center for a Livable Future (CLF), Johns Hopkins University Bloomberg School of Public Health	http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/	Our work is driven by the concept that public health, diet, food production and the environment are deeply interrelated and that understanding these relationships is crucial in pursuing a livable future.
Center for Regional Food Systems (CRFS), Michigan State University	http://foodsystems.msu.edu/	Engaging the people of Michigan, the United States and the world in developing regionally integrated, sustainable food systems.
Center for Environmental Farming Systems (CEFS), North Carolina State University	http://www.cefs.ncsu.edu/	CEFS develops and promotes just and equitable food and farming systems that conserve natural resources, strengthen communities, improve health outcomes, and provide economic opportunities in North Carolina and beyond.
Center on Food Security and the Environment (FSE), Stanford University	http://fse.fsi.stanford.edu/	The Center on Food Security and the Environment addresses critical global issues of hunger, poverty and environmental degradation by generating vital knowledge and policy-relevant solutions. FSE is a joint effort of the Freeman Spogli Institute for International Studies and the Stanford Woods Institute for the Environment.
Berkeley Food Institute (BFI), University of California Berkeley	http://food.berkeley.edu/	The Berkeley Food Institute works to catalyze and support transformative changes in food systems, to promote diversity, justice, resilience, and health, from the local to the global. BFI envisions a world in which nutritious, affordable food is available for all and is produced sustainably and fairly – ensuring healthy people and a healthy planet.
Agricultural Sustainability Institute (ASI), University of California Davis	http://asi.ucdavis.edu/	Our mission is to ensure access to healthy food and to promote the vitality of agriculture today and for future generations. We do this through integrative research, education, communication, and early action on big, emerging issues.
Center for Agroecology and Sustainable Food Systems (CASFS), University of California Santa Cruz	http://casfs.ucsc.edu/	The Center for Agroecology & Sustainable Food Systems is a research, education, and public service program at the University of California, Santa Cruz, dedicated to increasing ecological sustainability and social justice in the food and agriculture system.
Gund Institute for Ecological Economics, University of Vermont	http://www.uvm.edu/giee/	At the Gund Institute for Ecological Economics, we integrate natural and social sciences to understand the interactions between people and nature and to help build a sustainable future

Table 5. Website Content Analysis Scores: Research Center Websites

	UVM Food Systems Initiative	CIIFAD	Leopold Center for Sustainable Agriculture	Center for a Livable Future (CFL)	MSU Center for Regional Food Systems (CRFS)	NCSU Center for Environmental Farming Systems (CEFS)
Functionality						
Broken Links	above average	excellent	excellent	average	excellent	average
Spelling & Grammar	excellent	excellent	above average	excellent	excellent	excellent
Search Box	yes, parent site	yes	yes	yes, parent site	yes	yes
Homepage Load Time: Desktop	9.938s	1.809s	3.380s	3.217s	2.266s	3.408s
Homepage Load Time: Mobile	28.543s	3.707s	6.231s	6.787s	5.135s	7.086s
Mobile Friendly	no	moderately	moderately	no	no	no
Usability						
Layout Consistency	above average	excellent	above average	average	excellent	above average
Navigation: Organization	average	above average	below average	above average	excellent	above average
Navigation: Options	below average	above average	above average	above average	above average	above average
Navigation: Functionality	average	excellent	average	average	average	below average
Navigation: Click-Throughs	excellent	excellent	below average	above average	above average	above average
Link Labels	excellent	excellent	below average	average	excellent	above average
Color Contrast	excellent	excellent	above average	above average	above average	excellent
Accessibility Problems	2 known 0 likely 214 potential	3 known 0 likely 192 potential	0 known 0 likely 215 potential	25 known 1 likely 431 potential	1 known 0 likely 121 potential	42 known 1 likely 184 potential
Aesthetics						
Layout: Organization	below average	above average	below average	average	above average	above average
Color Palette	excellent	excellent	poor	average	excellent	average
Font	above average	excellent	below average	below average	excellent	below average
Graphics	below average	average	poor	average	average	below average
Dynamic Content	no	yes	no	yes	no	no
Simplicity	average	below average	poor	below average	excellent	below average
Content						
Copy	average	average	average	average	excellent	average
Regularly Updated	average	average	poor	poor	excellent	average
Researcher/Personnel Directory	average	average	average	above average	excellent	below average
Research	average	average	above average	average	above average	average
Publications	below average	poor	average	excellent	excellent	average
Education (For Students)	above average	below average	poor	excellent	poor	average
About	average	average	average	average	above average	below average
News	yes	yes	yes	yes	news	yes
Events	yes	yes	yes	yes	yes	yes
Annual Reports	no	yes	yes	no	no	no
Support	no	no	yes	yes	no	yes
Contact Information	yes	yes	yes	yes	yes	yes
Social Media	blog, Facebook, Twitter, YouTube	Facebook, Twitter	Blog, Facebook, iTunes U, YouTube	blog, Facebook, Podcasts Twitter, YouTube	Facebook, Twitter	Facebook, LinkedIn Twitter, YouTube
Overall Content Coverage	below average	average	below average	average	excellent	above average

	UVM Food Systems Initiative	Center on Food Security and the Environment (FSE)	Berkeley Food Institute (BFI)	Agricultural Sustainability Institute (ASI)	Center for Agroecology and Food Systems (CASFS)	Gund Institute for Ecological Economics
Functionality						
Broken Links	above average	below average	n/a	excellent	excellent	above average
Spelling & Grammar	excellent	above average	above average	above average	excellent	excellent
Search Box	yes, parent site	yes	no	yes	yes	yes, parent site
Homepage Load Time: Desktop	9.938s	3.641.s	4.352s	6.864s	7.735s	7.007s
Homepage Load Time: Mobile	28.543s	10.205s	25.973s	16.591s	18.840s	24.779s
Mobile Friendly	no	no	no	no	no	no
Usability						
Layout Consistency	above average	excellent	excellent	excellent	excellent	excellent
Navigation: Organization	average	excellent	above average	above average	average	excellent
Navigation: Options	below average	above average	below average	above average	above average	above average
Navigation: Functionality	average	above average	above average	below average	average	above average
Navigation: Click-Throughs	excellent	average	average	below average	average	above average
Link Labels	excellent	excellent	average	average	above average	excellent
Color Contrast	excellent	excellent	excellent	average	above average	excellent
Accessibility Problems	2 known 0 likely 214 potential	17 known 0 likely 423 potential	10 known 0 likely 264 potential	18 known 1 likely 279 potential	2 known 0 likely 262 potential	2 known 1 likely 282 potential
Aesthetics						
Layout: Organization	below average	above average	above average	above average	above average	above average
Color Palette	excellent	excellent	excellent	excellent	excellent	excellent
Font	above average	above average	excellent	above average	average	above average
Graphics	below average	excellent	excellent	above average	above average	excellent
Dynamic Content	no	no	yes	no	yes	no
Simplicity	average	excellent	above average	above average	above average	above average/average
Content						
Copy	average	average	below average	above average	average	above average
Regularly Updated	average	poor	average	poor	average	average
Researcher/Personnel Directory	average	excellent	above average	above average	average	above average
Research	average	excellent	excellent	average	above average	average
Publications	below average	excellent	average	excellent	above average	average
Education	above average	average	excellent	average	above average	excellent
About	average	above average	above average	excellent	average	average
News	yes	yes	yes	no	yes	yes
Events	yes	yes	yes	yes	yes	yes
Annual Reports	no	no	yes	no	no	no
Support	no	yes	yes	yes	yes	no
Contact Information	yes	yes	yes	yes	yes	yes
Social Media	blog, Facebook, Twitter, YouTube	Facebook, Twitter, YouTube	Facebook, Twitter	blog, Facebook, Instagram, Twitter	Facebook, Instragram	blog, Facebook, Soundcloud, Twitter, YouTube
Overall Content Coverage	below average	excellent	excellent	average	above average	average

"Through integrated domains of transdisciplinary research the Initiative seeks viable, regionally based additions/alternatives to the global food system. These alternatives target a revitalization of regional agriculture while improving public nutrition, protecting the environment and advancing the local economy. The Initiative's transdisciplinary nature allows strategic collaboration across all academic disciplines, ensuring dynamic and innovative results. The Initiative's advancement is built on three strategic tools: outreach, research, and education. Each of these tools are woven throughout the three overarching themes of UVM's work: Working Landscapes & Value-Added Food; Innovative Food Systems Organizations; and Food: Health & the Environment" (para. 3-4).

This background is accompanied by a graphical representation of "Food Systems at UVM: The Big Picture 2007-2012" (Figure 27).

The About page continues on to describe the initiative's three strategic tools: outreach, research, and education.

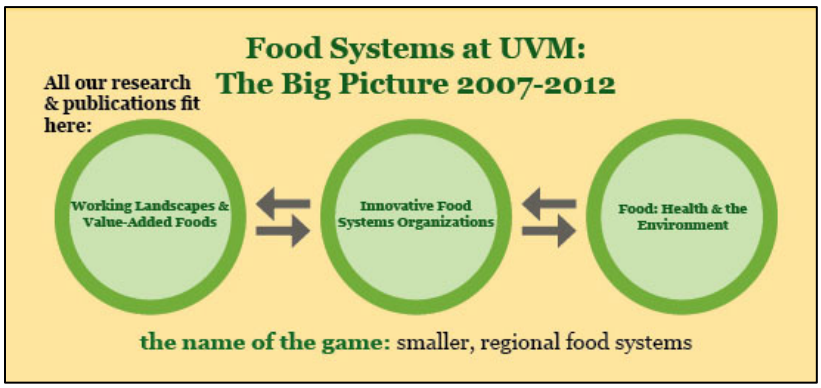


Figure 27. Food Systems at UVM: The Big Picture 2007-2012

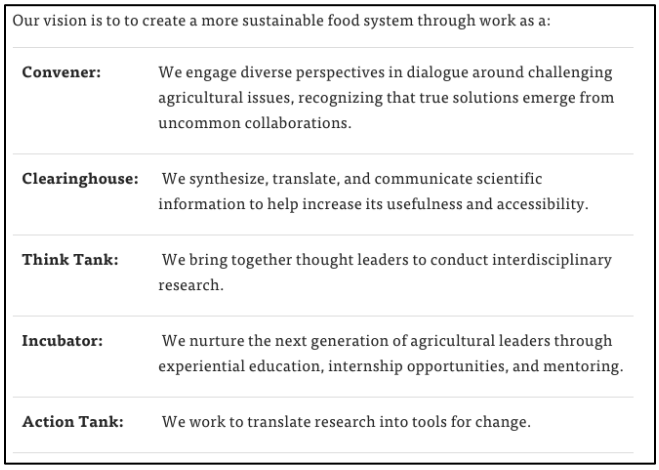
"Unlike other research universities, UVM is positioned in the heart of a vibrant regional food system. **Community commitment** to food issues and the vibrant food community in Vermont propel the Food Systems Initiative's research initiatives. Through local partnerships with farmers, purveyors of food products, and active community members UVM is the perfect home for community driven and supported food systems research" (para 5).

"The Food Systems Initiative currently supports over 140 transdisciplinary **research initiatives** that address local and regional food systems issues. One research initiative currently underway is the UVM Extension's New Farmer Project under the direction of Beth Holtzman. The research will bolster an aging farmer community and reduce the conversion of farmland for development" (para 6).

"New farmers from the research extension are invited to participate in UVM's **educational programs**. In addition to conferences and workshops Continuing Education offers an intensive 6-month New Farmer Training Program. Taught by both professors and expert farmers, participants in the program focus on sustainable agriculture through hands-on, skill-based learning" (para 7).

Crucially, what's missing from the website is a clear and concise definition of what food systems is, both generally but also at the University of Vermont. The text is dense and does not paint a picture of the various and complex interconnections on campus and in the community around food systems. The section highlights a few examples of the three key areas, but without links for users to find more information on each topic. The text is also

outdated, for example mentioning in future tense the Food Systems Masters Program, which started in 2012; this lack of currency undermines the credibility of the website as a whole.



Our vision is to to create a more sustainable food system through work as a:

Convener:	We engage diverse perspectives in dialogue around challenging agricultural issues, recognizing that true solutions emerge from uncommon collaborations.
Clearinghouse:	We synthesize, translate, and communicate scientific information to help increase its usefulness and accessibility.
Think Tank:	We bring together thought leaders to conduct interdisciplinary research.
Incubator:	We nurture the next generation of agricultural leaders through experiential education, internship opportunities, and mentoring.
Action Tank:	We work to translate research into tools for change.

Figure 18. UC Davis' ASI Vision Statement

Stanford University's Center on Food Security and the Environment addresses critical global issues of hunger, poverty and environmental degradation by generating vital knowledge and policy-relevant solutions. An interdisciplinary team of scholars accomplishes this mission through:

- A **focused research portfolio** in seven key areas: food and nutrition security, aquaculture, biofuels, climate and agriculture, agricultural innovations, "deadly connections" and crop and livestock systems
- A robust **teaching program**
- Direct science and policy advising

FSE is a joint effort of the **Freeman Spogli Institute for International Studies** and the **Stanford Woods Institute for the Environment**.

Figure 29. About the Center on Food Security and the Environment (FSE)

Peer comparators demonstrate different ways to emphasis their research center's mission, vision, goals, and action. The Cornell International Institute for Food, Agriculture and Development (CIIFAD) includes both Vision and Mission on their About[51] page, while the MSU Center for Regional Food Systems (CRFS) includes their mission, vision, and goals under About[52]. The Leopold Center for Sustainable Agriculture's About[53] page is dense, but includes a Frequently Asked Questions page, a timeline of their history, and a section on the impact of their work and how they measure success. UC Davis' Agricultural Sustainability Institute's (ASI's) About[54] page highlights their mission, their vision, and their five thematic program areas (Figure 28).

The About the Stanford Center on Food Security and the Environment (FSE)[55] page includes a concise description of their work (Figure 29), followed by a video overview of the Center. Below the video are sections on Approach, Goals, Leadership & Organization, and FSE Contacts, with links to Frequently Ask Questions[56] and Supporting FSE[57].

Johns Hopkins Center for a Livable Future's (CFL's) About Us[58] page highlights the priorities of their research in a bulleted list: food security; food production that supports environment and public health; effects of climate disruption on agriculture and vice versa; and food system policy change. The page also includes a visual timeline of CFL's history and program highlights. On their Our Mission[59] page, CFL highlights their mission and how they are directly workings towards pursuing that mission:

[51] http://ciifad.cals.cornell.edu/about-ciifad
[52] http://foodsystems.msu.edu/about
[53] http://www.leopold.iastate.edu/about/leopold-center
[54] http://asi.ucdavis.edu/about
[55] http://fse.fsi.stanford.edu/docs/about_fse
[56] http://fse.fsi.stanford.edu/docs/fse_faq
[57] http://fse.fsi.stanford.edu/docs/supporting_fsi
[58] http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/about/index.html
[59] http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/about/mission/

> "The mission of the Center for a Livable Future is to promote research and to develop and communicate information about the complex interrelationships among diet, food production, environment and human health, to advance an ecological perspective in reducing threats to the health of the public and to promote policies that protect health, the global environment and the ability to sustain life for future generations" (para. 2).

Under CFL's Key Interconnections[60], the website defines and visualizes their key areas of scholarship (diet, food production, public health, and ecosystem) in terms of a conceptual model that also takes into account global pressures (population growth, lack of equity, resource depletion, and climate disruption) (Figure 30).

The Berkeley Food Institute (BFI) has both an About Us page and a Background page. The Background[61] page provides the history of BFI while anchoring it in the context of global food movements and research. The About Us[62] page includes: one paragraph About BFI; Main Strategies and Objectives; Main Thematic Areas; BFI's Four Pillars; and Disciplines and Entitles Involved with the BFI. To enhance this text, they also include high-quality graphics (Figures 31 & 32). Additionally, BFI includes a downloadable promotional brochure and links to past annual reports.

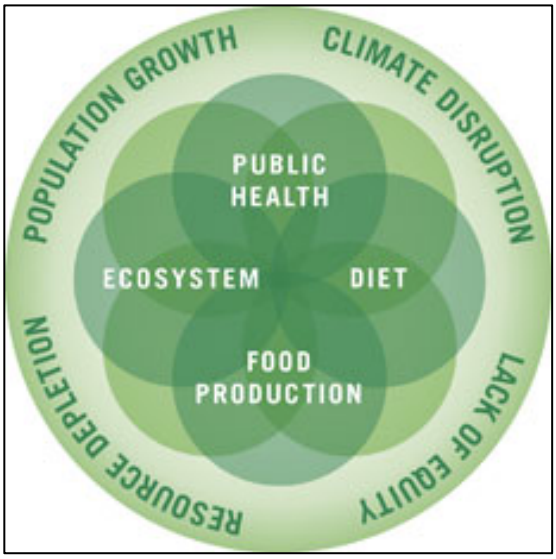


Figure 30. CFL Key Intersections Conceptual Model

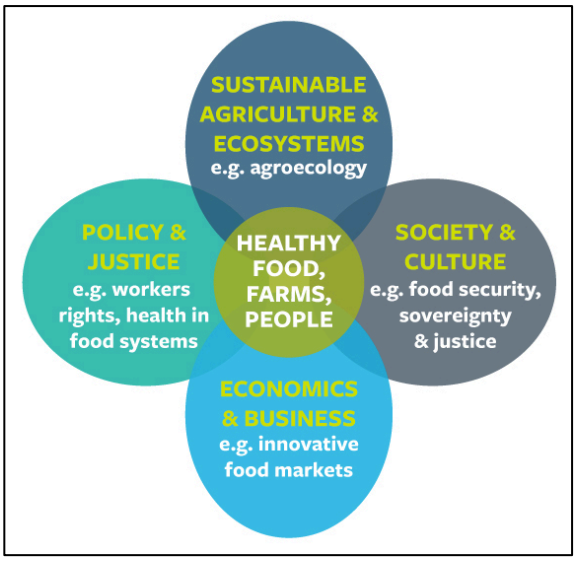


Figure 31. BFI Food Systems Main Thematic Areas

[60] http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/about/key_interconnections/
[61] http://food.berkeley.edu/background/
[62] http://food.berkeley.edu/

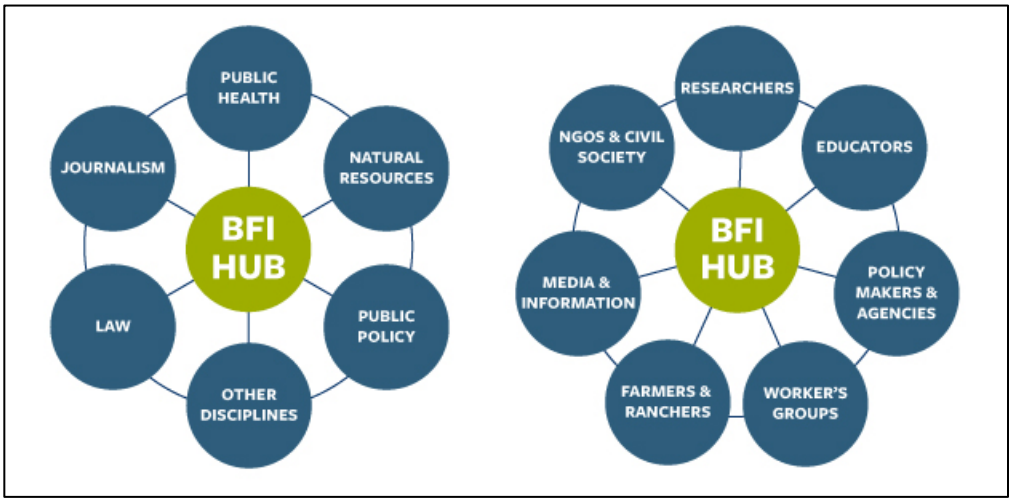


Figure 32. Disciplines and Entities Involved with the BFI

Recommendations:

- Clearly delineate mission, vision, and core research areas/priorities, with cross-links to relevant content within website.
- Define food systems at UVM.
- Invest in high quality graphics to represent both food systems and UVM's unique stake in food systems discourse and community activity.
- Ensure content is updated and timely.
- Apply writing for the web techniques to make this section more digestible for site visitors (e.g. short chunks of text, headers, bulleted lists, and hyperlinks to relevant sections).

Research, Projects & Publications

Priority: High

The UVM Food Systems Research Initiative website has a Research[63] page, with secondary categories including Research and Outreach Groups, Working Papers, Farm to Plate Research, and Gender, Class, and Food Work. Under the main Research heading, a select number of "current topics" are highlighted, with a short description of the researcher and their research project (Figure 33).

Figure 33. UVM Food Systems Initiative Research Profile

[63] http://www.uvm.edu/foodsystems/?Page=research.html&SM=researchmenu.html

Under Research and Outreach Groups[64], there are links to departments, facilities, and other research initiatives at UVM. Working Papers[65] includes white papers created by the UVM Food System Research Collaborative[66] in 2011. Farm to Plate Research[67] includes a link to an MS Excel spreadsheet that provides a snapshot of research supporting Vermont's Farm to Plate Initiative (as of 2011), while Gender, Class, and Food Work[68] provides an overview from a 2013 workshop.

This section on the website is ambiguous in the currency of the research topics; many of the topics that are prominently highlighted are at least several years old. One of the most significant liabilities of this section is that these research areas aren't explicitly linked – or even necessarily related – to the mission and priorities of the initiative as outlined on the About[69] page: Working Landscapes & Value Added Food; Innovative Food Systems Organizations; and Food: Health & the Environment.

CIIFAD has an International Projects and Engagement[70] page that provides short descriptions of current programs that support their organization's mission. MSU's CRFS has an Activities[71] page that lists Current Working Groups, in addition to current areas of research: Farm & Farmer Development; Farm to Institution/School; Food Systems Infrastructure, Planning & Policy; Michigan Good Food; and Network Development. UC Davis' website visually represents ASI's research areas on their Topics[72] page (Figure 34), as does Stanford's FSE Themes and Projects[73] page. FSE also breaks their research down by Topics (e.g. Governance, International Relations, Health and Medicine) and Regions (e.g. Asia Pacific, Europe, Sub-Saharan Africa)[74].

Figure 34. UC Davis' Research Topics

[64] http://www.uvm.edu/foodsystems/?Page=campusgroups.html&SM=researchmenu.html
[65] http://www.uvm.edu/foodsystems/?Page=workingpapers.html&SM=researchmenu.html
[66] http://www.uvm.edu/crs/?Page=projects/fsrc.html&SM=projects/projectssubmenu.html
[67] http://www.uvm.edu/foodsystems/?Page=farmtoplate.html&SM=researchmenu.html
[68] http://www.uvm.edu/foodsystems/?Page=gender-class-food.html&SM=researchmenu.html
[69] http://www.uvm.edu/foodsystems/?Page=about.html&SM=aboutmenu.html
[70] http://ciifad.cals.cornell.edu/international-projects-and-engagement
[71] http://foodsystems.msu.edu/activity
[72] http://asi.ucdavis.edu/topics
[73] http://fse.fsi.stanford.edu/research
[74] http://fse.fsi.stanford.edu/topics

The Gund Institute at UVM highlights four areas of focus on their Research[75] page: Nature's Benefits, Ecological Economies, Healthy Landscape and Seascapes, and Climate Change. These focus areas include short descriptions, with related researchers bios and key projects (Figure 35). On their Research Projects[76] page, these research programs are highlighted more in-depth; the page also includes an archive with past research projects.

Figure 35. Gund Institute for Ecological Economics Research Focus: Nature's Benefits

The Leopold Center at Iowa State also includes a Programs[77] page that breaks the research into four initiatives: ecology; marketing and food systems; policy; and cross-cutting. Each initiative's individual page provides a brief overview of the research area, current and completed grant projects, frequently asked questions, and news. The Leopold Center also includes a section for Working Groups and Research Teams[78] that highlight current and past collaborations on a variety of community-based topics. While lengthy, these group pages include a description of the research area, the group's goals, resources created by the group, related grants, related publications, related links, and research partners.

A necessary aspect of demonstrating research impact is by providing access to related or funded publications for users. The display of publications on peer research center websites provide numerous examples of how to integrate publications into the design of the website. The types of publications organizations put out is diverse and includes both grey literature (policy briefs, research reports, white papers) and scholarly literature (peer-review publications), as well as multimedia resources (presentations, webinars, and podcasts). Most of the research centers host and maintain the documents on their own websites, but some, including both UC Davis and UC Santa Cruz, have worked with their institutional repository to archive the research.

MSU CRFS Resources[79] page includes a searchable and browsable database of their publications (Figure 36). Stanford's FSE's Publications[80] page includes both a search function as well as faceted browsing by type, topic, and region (Figure 37). The Johns

[75] http://www.uvm.edu/giee/?Page=focus.html&SM=researchsubmenu.html
[76] http://www.uvm.edu/giee/?Page=research.html&SM=researchsubmenu.html
[77] http://www.leopold.iastate.edu/programs
[78] http://www.leopold.iastate.edu/working_groups
[79] http://foodsystems.msu.edu/resources
[80] http://fse.fsi.stanford.edu/publications

Hopkins Center for a Livable Future (CLF)[81] and the UC Davis ASI[82] also created searchable databases of publications, while the Leopold Center has a browsable Publications and Papers[83] section. The North Carolina State University Center for Environmental Farming Systems (CEFS) Publications[84] page includes an extensive bibliography of journal articles, abstracts, books and book chapters, bulletins, reports, proceedings, presentations, and student research. Similarly, UC Santa Cruz's Center for Agroecology and Sustainable Food Systems (CASFS) includes a Research Bibliography[85] that has publications by center staff going back to 1994.

Figure 36. MSU CRFS Resources

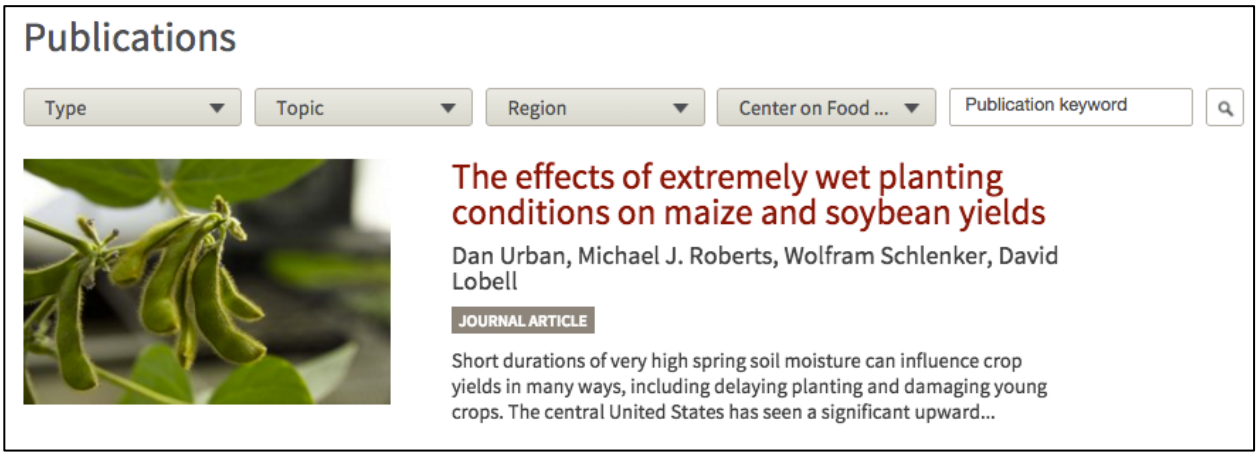


Figure 37. FSE's Publications

[81] http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/research/publications/index.html
[82] http://asi.ucdavis.edu/resources/asi-publications
[83] http://www.leopold.iastate.edu/pubs
[84] http://www.cefs.ncsu.edu/publications.html
[85] http://casfs.ucsc.edu/research/research-bibliography.html

Another area addressed under the research heading are projects that are specific to the organization's community. UC Santa Cruz's CASFS includes a Community Outreach and Public Service[86] page that highlights how the center is collaborating with and benefiting the community. Additionally, the Johns Hopkins CFL, the MSU CRFS, and the Leopold Center all provide details about community-based research projects.

Two additional areas for consideration under a research heading: grants and ideas for student research. The Leopold Center is the only website of the peer comparators that specifically highlights both current grant opportunities and past grant-funded projects under their Grants[87] page. Johns Hopkins' CFL website has a Research and Project Ideas for Students[88] section that is working to connect researchers with students who are interested in exploring topics related to food systems and public health.

Recommendations:

- Align mission, vision, and goals of Food Systems Initiative with research topics and priorities, including Food Systems Masters Program "cluster areas".
- Cross-link research and publications with researchers.
- Rename header "Research and Outreach Groups" to "Research Facilities and Research Centers".
- Migrate Catamount Education Farm to "Research Facilities and Research Centers" header
- Migrate Partnerships from About section to Research section; expand.
- Create Publications header that includes open access to publications produced by and are related to food systems at UVM, including white papers, presentations, webinars, and peer-reviewed literature.
    - Work with UVM Libraries to create a Food Systems Research Center collection on ScholarWorks @ UVM (e.g. Center for Research on Vermont Occasional Papers collection[89]) to archive, preserve, and provide access to publications.

Homepage

Priority: Medium High

The UVM Food Systems Research Initiative homepage[90] (Figure 38) seeks to serve as the primary portal for food systems at the University of Vermont. The homepage has a left navigation menu, with links to: About, Academic Programs, Faculty, Research, Food Systems Summit, Catamount Educational Farm, Real Food Challenge, Calendar of Events, News, Videos, Blogs, Join the Conversation, and Contact Us. The right column includes a blog-powered News feature and an embedded Twitter widget. The center column highlights Programs, Research, and Events using images and short descriptions.

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[86] http://casfs.ucsc.edu/community/index.html
[87] http://www.leopold.iastate.edu/grants
[88] http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/research/research_ideas/
[89] http://scholarworks.uvm.edu/crvocc/
[90] https://www.uvm.edu/foodsystems/

The presentation and design of the homepage is one of the most important aspects of an organization's website – it provides a visual first impression. Currently, there is an imbalance between content and white space, with content filling all corners of the homepage, projecting a moderate sense of clutter. The content is also static and the visuals are modest, which does not directly and immediately engage the user.

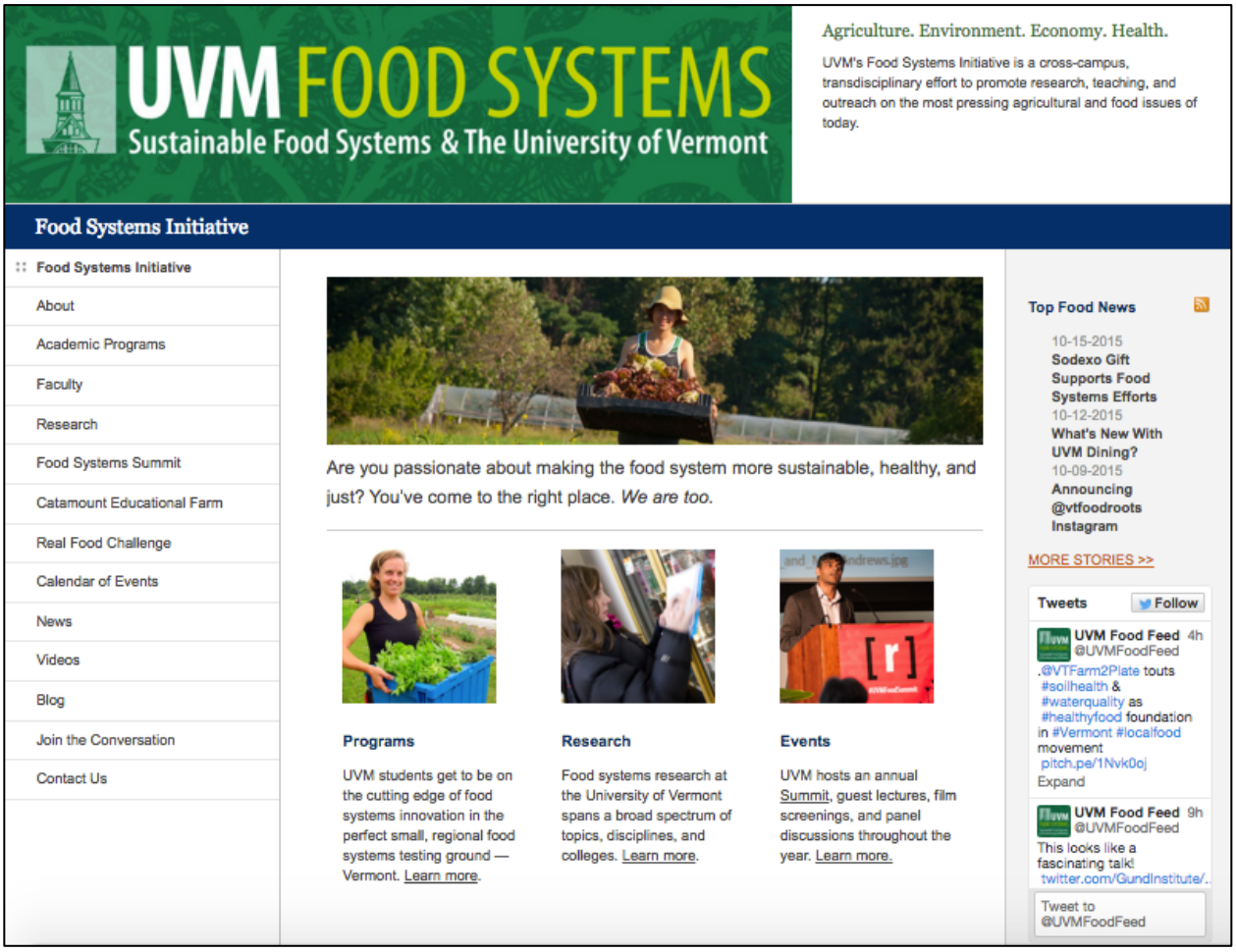

Figure 38. UVM Food Systems Initiative homepage

The images selected for the homepage, and elsewhere on the website, are appropriate for the content, but their scaling and cropping create quality issues. From a design standpoint, it is better to employ few large, high-quality images than many small, medium-quality images. The Stanford Center on Food Security and the Environment[91], the Berkeley Food Institute[92] (Figure 39), and the UC Santa Cruz Center for Agroecology & Sustainable Food Systems[93] (Figure 40) have large-scale, high quality images on their homepages that create visual impact; the latter two examples include dynamic image rotation.

[91] http://fse.fsi.stanford.edu/
[92] http://food.berkeley.edu/
[93] http://casfs.ucsc.edu/

Figure 39. Berkeley Food Institute Homepage

Figure 40. UCSC Center for Agroecology & Sustainable Food Systems Homepage

Figure 41. MSU Center for Regional Food Systems Homepage

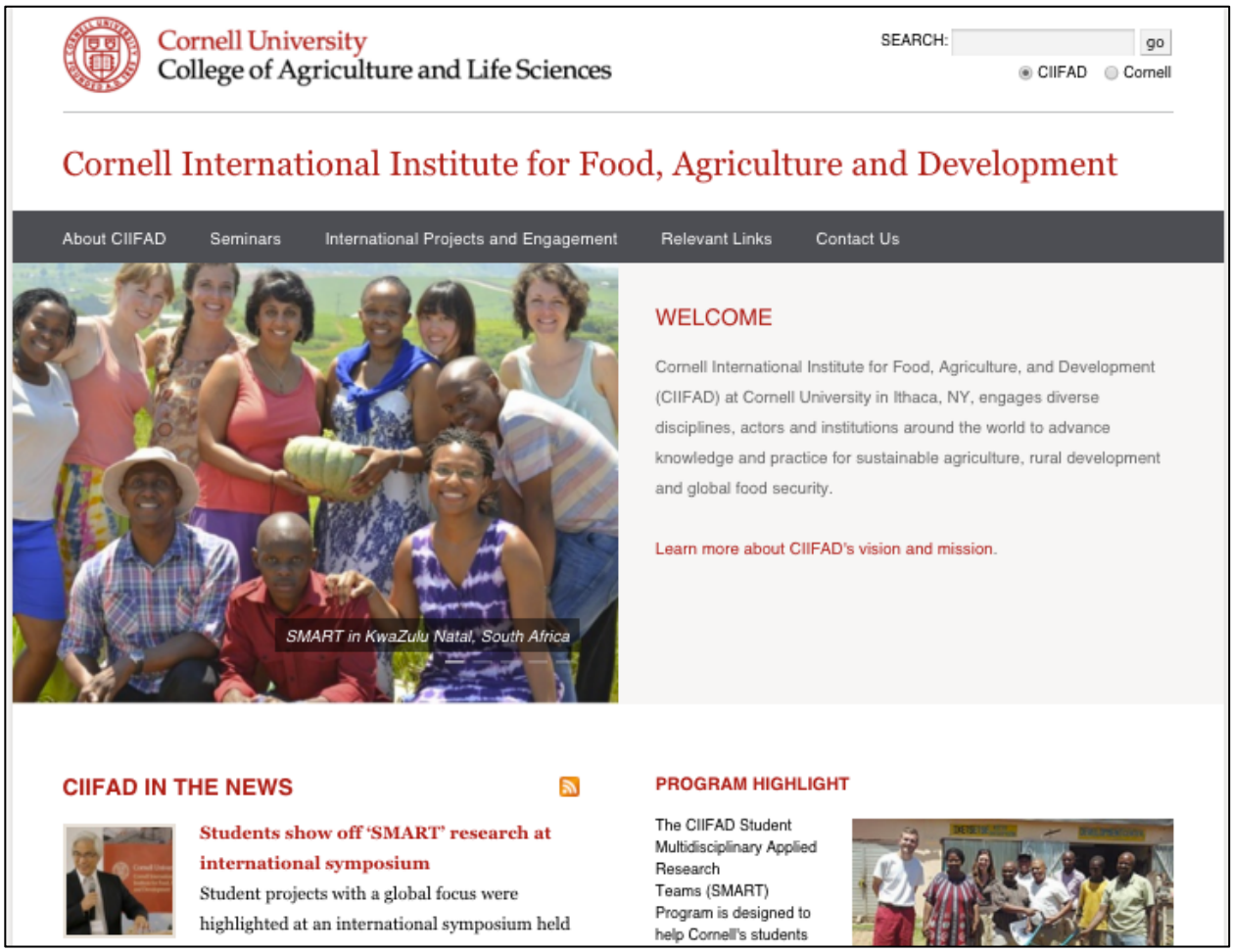

Figure 42. Cornell International Institute for Food, Agriculture and Development Homepage

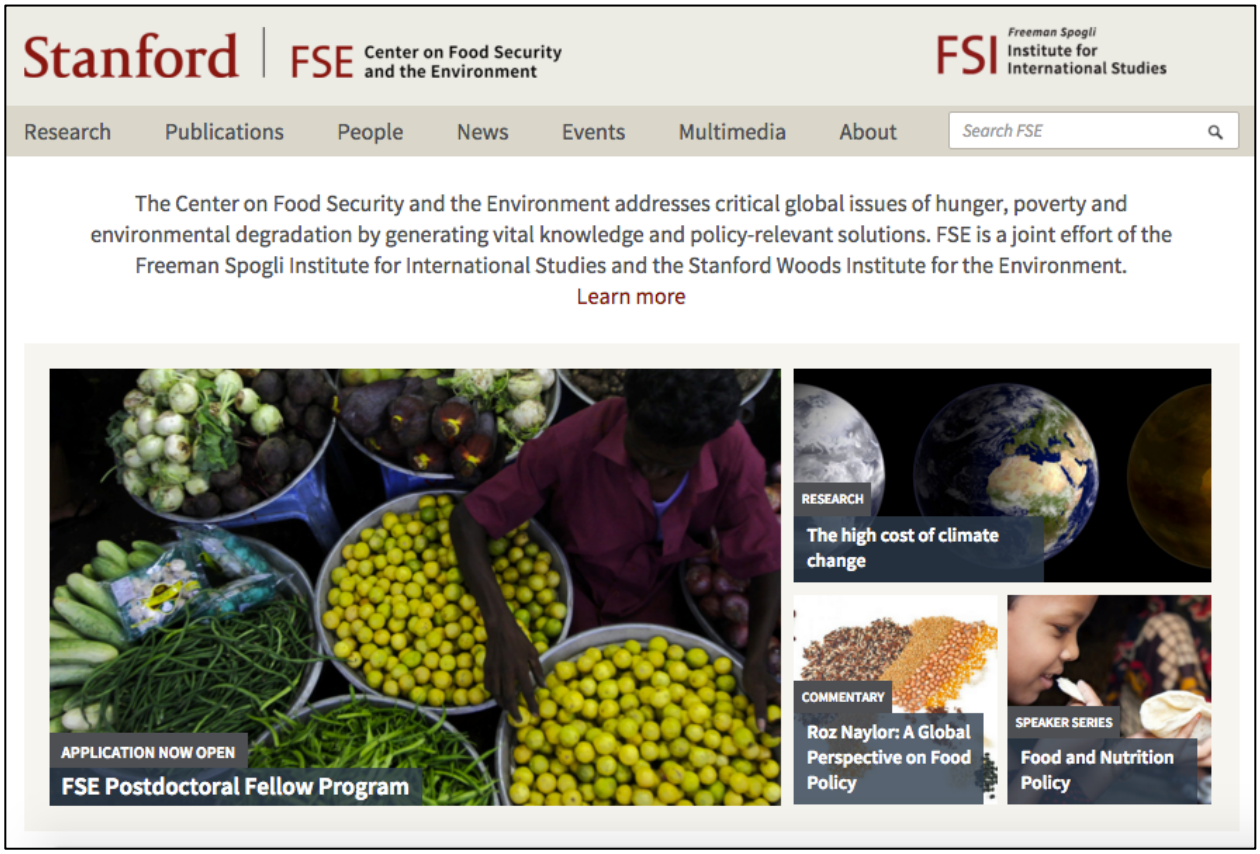

Figure 43. Stanford Center on Food Security and the Environment Homepage

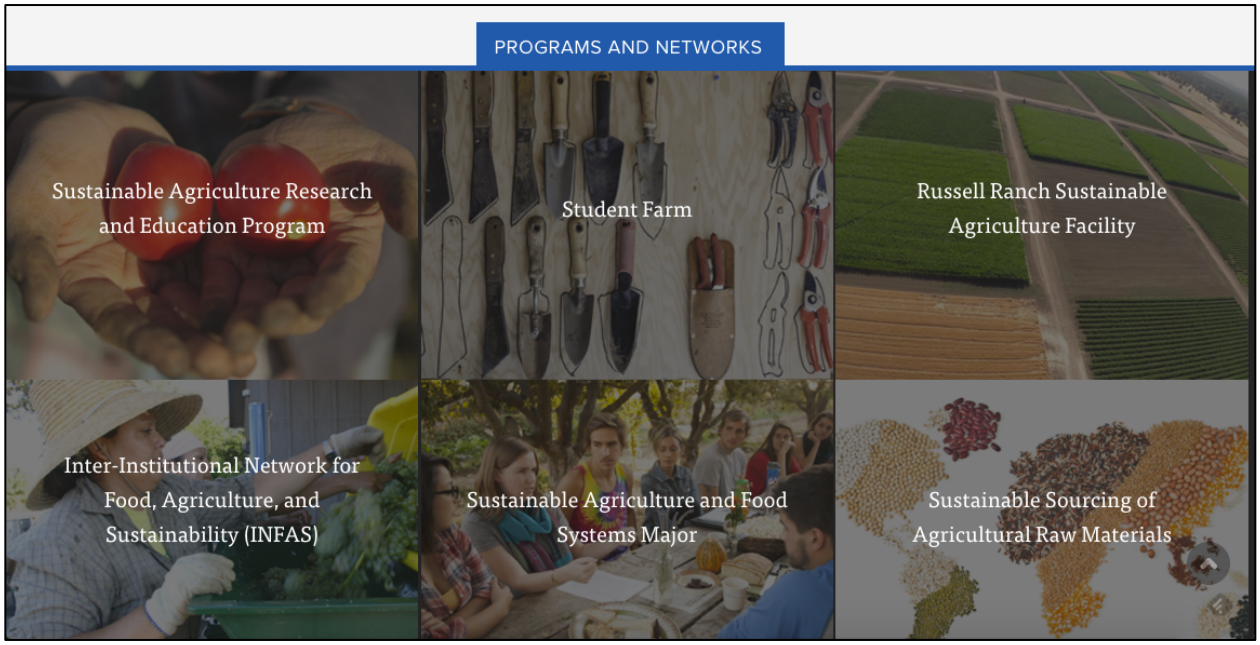

Figure 44. UC Davis' Agricultural Sustainability Institute Homepage

The UC Santa Cruz Center for Agroecology & Sustainable Food Systems[94] (Figure 14) and the MSU Center for Regional Food Studies[95] (Figure 41) offer two simplified homepage layouts consisting of a large banner at the top, a top navigation menu, and three columns of limited content beneath. The Cornell International Institute for Food, Agriculture, and Development[96] has two columns of content (Figure 42). The Stanford Center on Food Security and the Environment[97] adopts a different layout, with a visual grid of current news, events, and research (Figure 43), while UC Davis' Agricultural Sustainability Institute[98] (Figure 44) uses a photo gallery to visually display research areas.

Recommendations:

- Reorganize layout of homepage to increase the amount of white space and eliminate clutter.
- Use dynamic content to create fresh and engaging look and feel for users.
- Use high-quality photographs and graphics to visually draw users to engage.

People

Priority: Medium High

The Food Systems Initiative Faculty page includes a lengthy directory listing 73 faculty members, with their school or department and short description of research areas of interest; most directory listings include links to departmental faculty biographies (Figure 45).

Food Systems Faculty

Faculty members from across the university engage in food systems research, teaching, and outreach. Food systems faculty members are listed below with their college or departmental affiliation and research interests:

Carol Adair, Rubenstein School of Environment and Natural Resources — *Global change (including climate change), ecosystem ecology, biogeochemistry, carbon storage and cycling, non-invasive plant invasions, modeling and statistics*

Appala Raju Badireddy, College of Engineering and Mathematical Sciences — *Water and food safety, water quality and treatment, water reuse, resource recovery from solid- and liquid-food waste, sustainable environmental engineering, nanotechnology and food safety*

John Barlow, Animal Science — *Mastitis epidemiology, infectious disease epidemiology, zoonotic disease, antimicrobial resistance, global animal and public health*

Cynthia Belliveau, Continuing and Distance Education — *Educational leadership and policy studies*

Linda Berlin, Center for Sustainable Agriculture; Nutrition and Food Sciences — *Working across disciplines to better understand food system concerns*

Figure 45. UVM Food Systems Initiative Faculty

[94] http://casfs.ucsc.edu/index.html
[95] http://foodsystems.msu.edu/
[96] http://ciifad.cals.cornell.edu/
[97] http://fse.fsi.stanford.edu/
[98] http://asi.ucdavis.edu/

In comparison, the Gund Institute at UVM has a directory[99] that includes the staff, fellows, graduate students, affiliates, visiting scholars, and alumni. The Stanford FSE[100] includes the administration, core faculty and researchers, and affiliated faculty, while BFI's Who We Are[101] includes Directors, Staff, Student Employees, Affiliated Faculty, Visiting Fellows, Student Fellows, and Executive Committee, along with Partner Units, Community Partners, and Donors. The MSU Center for Regional Food Systems directory displays thumbnail photos of staff and affiliates with basic contact information (Figure 46); the hyperlinked name leads to a biography and related publications (Figure 47).

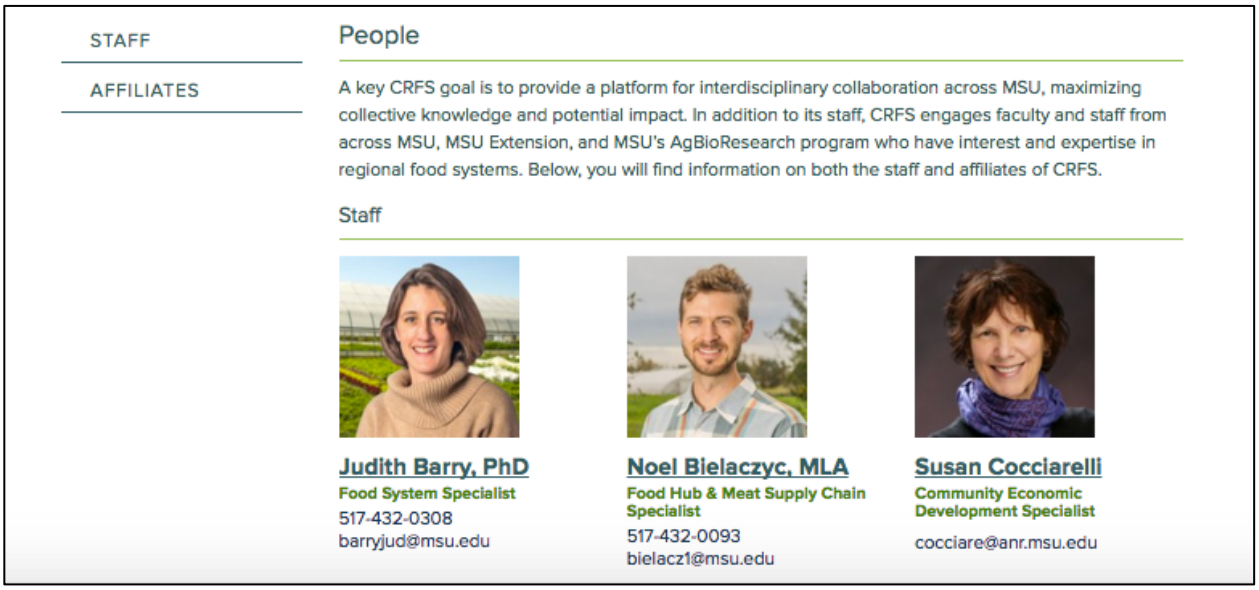

Figure 46. MSU Center for Regional Food Systems People

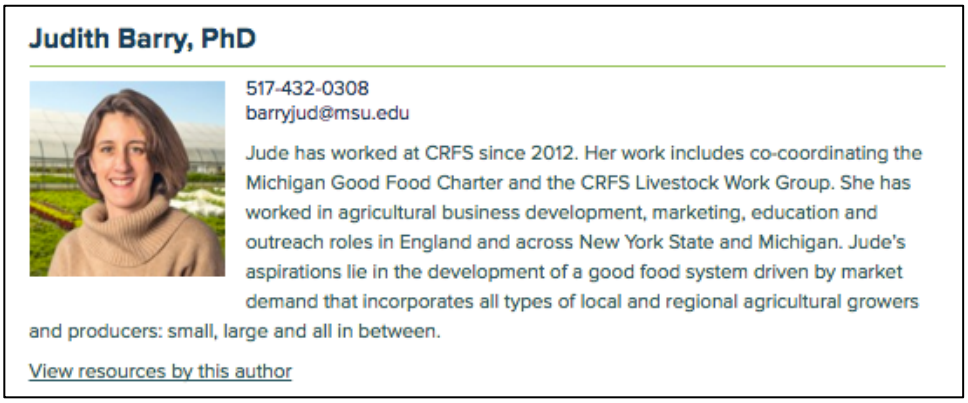

Figure 47. MSU Center for Regional Food Systems Biography

Recommendations:

- Rebrand Faculty page as People page
- Migrate the Food Systems Steering Committee to People page

[99] http://www.uvm.edu/giee/?Page=people.html&SM=peoplesubmenu.html
[100] http://fse.fsi.stanford.edu/people/faculty
[101] http://food.berkeley.edu/directors-and-staff/

- Develop a uniform faculty profile for Food Systems affiliated faculty including at minimum profile photo, contact information and research areas; additional fields, including courses taught, grants, or publications, would also be useful.
- Cross-link researchers with their research and publications.

Navigation

Priority: Medium

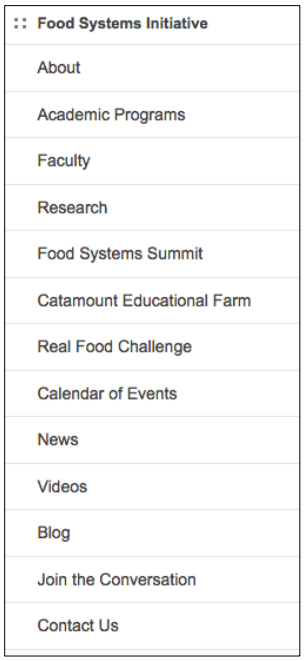

Figure 48. UVM Food Systems Initiative Main Navigation Menu

The hierarchical organization of the navigation menu for the UVM Food Systems Research Initiative website is not optimized for functionality. *Primary navigation* includes the content that users are most interested in, while *secondary navigation* is for content that does not serve the primary goal of the website. The primary navigation options[102] (Figure 48) include both major themes, such as Academic Programs and Research, as well as secondary themes, such as the Food Systems Summit (an event), the Real Food Challenge (a co-curricular activity), and the Catamount Educational Farm (a research facility).

This primary navigation includes thirteen links; including all secondary navigation, there are a total of 30 navigation links. Too many navigation options can become overwhelming for a visitor who is unable to find what they are looking for quickly, and if the options are not logically or systematically organized (e.g. alphabetically), it can increase confusion.

The order of navigation is also highly crucial. The "serial position effect," based on the principles of *primacy* and *regency*, demonstrates that items that appear first or last on any list are most prominent. This principle drives why "Contact Us" is almost universally placed last on navigation menus.

Organization of content should be the driver for the navigational structure of the website. Peer websites offer more streamlined navigation, including Stanford's FSE[103] (Figure 49) and the MSU Center for Regional Food Studies[104] (Figure 50).

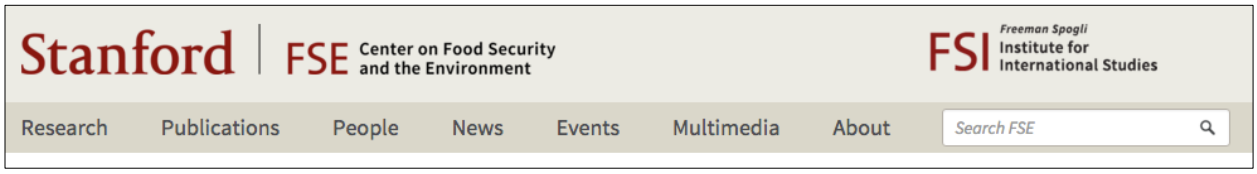

Figure 49. Stanford Center on Food Security and the Environment Main Navigation Menu

[102] https://www.uvm.edu/foodsystems/
[103] http://fse.fsi.stanford.edu/
[104] http://foodsystems.msu.edu/

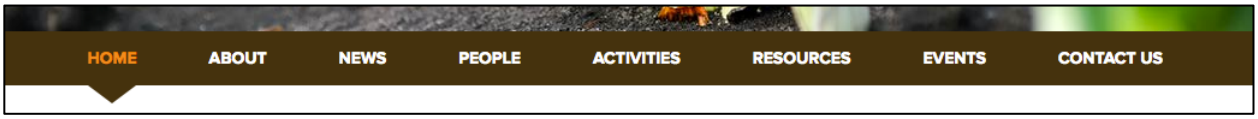

Figure 50. MSU Center for Regional Food Studies Main Navigation Menu

Recommendations:

- Reorganize the primary navigation menu into five or six top themes, e.g. About, People, Research, Academics, News, and Events; arrange this according to the serial position effect.
- Ensure that navigation labels use precise language to clearly describe the represented content.

Continuing Education / For Students

Priority: Medium

The current website includes an Academic Programs section, with secondary headings of Internship Program and Student Activities. Academic Programs[105] highlights the variety of education programs currently available at the University of Vermont related to food systems: the Food Systems Graduate Program; the Food Systems Undergraduate Minor; the Food Systems Internship Program; the Sustainable Food Systems Leadership Certificate; the Food Hub Management Certificate; and the Farmer Training Program (Figure 51), in addition to a list of food systems related undergraduate degree programs. The Internship[106] page lists Summer 2015 internship opportunities, while the Food Systems Student Activities[107] page includes links to related co-curricular programs. Separately on the main navigation menu are links to the Catamount Educational Farm[108] and the Real Food Challenge[109].

Figure 51. UVM Food Systems Initiative Academic Programs

[105] http://www.uvm.edu/foodsystems/?Page=programs.html&SM=programmenu.html
[106] http://www.uvm.edu/foodsystems/?Page=internprogram.html&SM=programmenu.html
[107] http://www.uvm.edu/foodsystems/?Page=studentactivities.html&SM=programmenu.html
[108] http://learn.uvm.edu/partners/cals/programs/catamount-educational-farm/
[109] http://www.uvm.edu/foodsystems/?Page=realfood.html&SM=realfoodmenu.html

Half of the peer comparator research center websites address the student audience. UC Santa Cruz's website has an Education[110] section that includes programs for undergraduate students and graduate students, their Life Lab Garden Classroom "Food, What?!" Program aimed at K-12 students, and resources for educators. Further, under their Apprenticeship[111] section, they have information on practical and academic training opportunities for agroecology and organic farming and gardening. The Education[112] section on the Johns Hopkins CFL website includes information about their Food Systems Certificate, related courses at the Bloomberg School of Public Health, links to materials from their Massive Open Online Courses (MOOCs) on "Food Production, Public Health and Environment" and "Baltimore Food Systems: A Case Study of Urban Food Environments," curricular materials for K-12 educators, and past seminars and symposia.

The Gund Institute at UVM includes information about Education Programs[113], including graduate research, the graduate certificate, ateliers (problem-solving workshops), educational videos, and What Our Alumni Do[114]. The Berkeley Food Institute has a section, For Students[115], which includes undergraduate and graduate studies at UC Berkeley, student organizations, fellowship opportunities, and related food courses. NCSU's Center for Environmental Farming Systems also includes internship and apprenticeship opportunities under Get Involved[116], while under Programs, the UC Davis' website has a link to the Sustainable Agriculture and Food Systems Major[117], including internship resources. CIIFAD's Seminar[118] page includes information about their weekly international seminar series.

Recommendations:

- Collaborate with the Food Systems Graduate Program, the Food Systems Minor, and the Continuing and Distance Education food systems programs to create complementary cross-references between websites and avoid duplication.
- Clearly differentiate between undergrad programs, graduate programs, and continuing education/professional programs
- Separate internship program from educational programs
- Migrate Real Food Challenge under Education Student Activities section
- Develop internship, apprenticeship, and employment opportunities section.

[110] http://casfs.ucsc.edu/education/index.html
[111] http://casfs.ucsc.edu/apprenticeship/index.html
[112] http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/education/index.html
[113] http://www.uvm.edu/giee/?Page=education/education.html&SM=educationsubmenu.html
[114] http://www.uvm.edu/giee/?Page=education/alumni_jobs.html&SM=educationsubmenu.html
[115] http://food.berkeley.edu/students/
[116] http://www.cefs.ncsu.edu/getinvolved.html
[117] http://asi.ucdavis.edu/programs/safs
[118] http://ciifad.cals.cornell.edu/seminars

UVM Food Systems Website Analysis: Conclusion

The purpose of this study was to evaluate the content of the Food Systems Research Initiative website (https://www.uvm.edu/foodsystems/) and the Food Systems Graduate Program website (http://www.uvm.edu/foodsystemsprogram/) and provide a critical analysis. Both of these websites provide the foundation for a strong web presence for Food Systems work at UVM, but both need attention to bring the websites in line with user expectations and good web design practices.

It is of utmost importance that web administrators for both of these websites work closely together to design sites that reflect a consistent identity, strategy, and stated goals – in short, they must work together to promote the same image of food systems at UVM. While outside the scope of this project, this consistency must extend to the Food Systems undergraduate minors website, as well as any website created for an undergraduate major in Food Systems. This collaboration is essential for another reason: there is necessarily overlap between these different websites, and it is more time efficient to create a content strategy and re-use content than to independently create content in silos. With the campus-wide implementation of Drupal, a content management system, infrastructure will be in place to facilitate easier collaboration across multiple websites.

One area of much needed attention is a cohesive definition and scope of food systems work at UVM – multiple definitions and approaches towards food systems as a new research domain have emerged among the stakeholders, variably referred to as cross-disciplinary, interdisciplinary, and transdisciplinary (Rosenfield, 1992).

In the initial TRI proposal, *food systems* was defined as, "an interconnected web of activities, resources and people that extends across all domains involved in providing human nourishment and sustaining health, including production, processing, packaging, distribution, marketing, consumption and disposal of food. The organization of food systems reflects and responds to social, cultural, political, economic, health and environmental conditions and can be identified at multiple scales, from a household kitchen to a city, county, state or nation" (Grubinger et al., 2010, p. 3).

The Food Systems Initiative, which resulted from the TRI proposal, "seeks viable, regionally based additions/alternatives to the global food system. These alternatives target a revitalization of regional agriculture while improving public nutrition, protecting the environment and advancing the local economy… [There are] three overarching themes of UVM's work: Working Landscapes & Value-Added Food; Innovative Food Systems Organizations, and Food: Health & the Environment" (University of Vermont Food Systems Initiative, 2015, para. 3–4).

The Food Systems Graduate Program defines food systems as, "an exciting and flourishing domain of inquiry, one that looks at the complex and interdependent relationships between humans and their food - everything from microbes found in compost facilities to global trade agreements" (University of Vermont, 2015a, para. 1). The Food Systems Minor describes its interdisciplinary curriculum: "The design of the Food Systems minor offers students an historical perspective and structural framework for studying our contemporary food system across disciplines. Students will identify and examine complex issues involving food, from

soil to table, and develop knowledge and skills to become a more sustainable and responsible food citizen" (University of Vermont, 2015b, para. 2), while the emphasis from UVM's Breakthrough Leaders Professional Certificate in Sustainable Food Systems is a cross-disciplinary program that, "addresses the social, environmental, economic, and diet and health (SEED) impacts of our food system" (University of Vermont Continuing and Distance Education, n.d.-a, para. 1). A draft of Food Systems undergraduate major proposal states, "The field of food systems is a compelling interdisciplinary domain of study because it elucidates connections among vital interests of humanity in creating nourishment, pursuing health and well-being, and maintaining the environment. The study of the relationship between humans and their food requires a holistic analysis; it is necessary to consider everything from microbes found in compost facilities to global trade agreements" (Kolodinsky, 2015, p. 4).

Websites are manifestations of complex systems. "Information architects are inveterate systems thinkers. In the Web's early days, we were the folks who focused less on pages than on the relationships between pages. Today, we continue to design organization, navigation, and search systems as integral parts of the whole" (Morville, 2012, para. 12). Beyond just clearly defining food systems, the websites need to visually demonstrate the complexity of food systems. "There is a problem in discussing systems only with words. Words and sentences, by necessity, come only one at a time in linear, logical order. Systems happen all at once. They are connected not just in one direction, but in many directions simultaneously. To discuss them properly, it is necessary to use a language that shares some of the same properties as the phenomena under discussion" (Meadows, 2008, pp. 4–5).

There is much work to be done moving forward. Noir Sur Blanc (n.d.) suggests developing a comprehensive communication strategy: "a communications approach is a reflection of the reality, the identity and the vision of an institution. It must relay and express a strategic position. And not just selectively, or occasionally; it has to be ongoing and permanent. Better yet, a communications strategy must constantly challenge, stimulate and even advance a positioning. And as a result, it should strengthen and promote the institution's brand. In short, communications and strategy are closely linked" (p. 14). The fundamental aspects of the communication strategy should focus on the long-term, stress the strengths of the institution, and give meaning to the institution by emphasizing its values. Further, institutions can refine their image by focusing specifically on what makes them unique and innovative, clearly establishing their niche in a competitive market.

This study only focused on the research phase of the information architecture framework (Rosenfeld et al., 2015). It is recommended that moving forward, a project manager is appointed or working group is convened to address changes and updates to the Food Systems web presence at UVM. In addition to expanding the research phase to develop a more unified and cohesive framing of Food Systems at UVM, the next stage is planning: creating a more robust content inventory, including missing content, and developing a site map. Following planning is the design and development phases; it is strongly recommended to hire a website and graphic design firm to develop the documents from the planning stage into detailed wireframes and styles guides before developing a beta website for testing. Following the site launch, it will be important to maintain a content strategy and governance structure (U.S. Department of Health & Human Services, 2015c) for continually evaluating and updating the website(s) to retain UVM's positioning in Food Systems related work.

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Appendix A. Website Content Analysis Scoring Rubric: Graduate Program Websites

Dimension: Functionality					
	Poor	**Below Average**	**Average**	**Above Average**	**Excellent**
Broken Links*	Many broken links; many link redirects	Few broken links; many link redirects	Few broken links; few link redirects	No broken links; few link redirects	No broken links; no link redirects
Spelling and Grammar^	Significant errors in spelling, punctuation, or grammar	Many errors in spelling, punctuation, or grammar	Some errors in spelling, punctuation, or grammar	Minimal errors in spelling, punctuation, or grammar	No errors in spelling, punctuation, or grammar
Search	No, does not have customized search for website		Has customized search for parent website		Yes, has customized search for website
Homepage Load Time: Desktop	Checked using WebPageTest: Cable (5/1 Mbps 28ms RTT) Connection and Dulles, VA, Test Location: http://www.webpagetest.org/				
Homepage Load Time: Mobile	Checked using WebPageTest: Mobile 3G – Fast (1.6 Mbps/768 Kbps 150ms) Connection and Dulles, VA, Test Location: http://www.webpagetest.org/				
Mobile Friendly#	No, not mobile friendly		Moderately mobile friendly		Yes, mobile friendly

* Checked using W3C Link Checker: https://validator.w3.org/checklink
^ Checked using W3C Spell Checker: http://www.w3.org/2002/01/spellchecker
# Checked using W3C MobileOK Checker: https://validator.w3.org/mobile/

Dimension: Usability					
	Poor	**Below Average**	**Average**	**Above Average**	**Excellent**
Layout: Consistency	Secondary and tertiary pages have many inconsistencies in layout	Secondary and tertiary pages have some inconsistencies in layout	Consistent secondary page layout; tertiary page layouts have many inconsistencies	Consistent secondary page layout; tertiary page layouts have some inconsistencies	Consistent layout throughout secondary and tertiary pages
Navigation: Organization	Poor organization of navigation hierarchy	Good organization of navigation hierarchy; secondary navigation is adequately organized	Good organization of navigation hierarchy; secondary navigation is logically organized	Excellent organization of navigation hierarchy; secondary navigation is adequately organized	Excellent organization of navigation hierarchy; secondary navigation is logically organized

Navigation: Options	Navigation menu has more than 15 items	Navigation has up to 15 items; hidden or dropdown sub-menus are common	Navigation has up to 15 items; hidden or dropdown sub-menus are limited	Navigation menu has 10 items or fewer; hidden or dropdown sub-menus are common	Navigation menu has 10 items or fewer; hidden or dropdown sub-menus are limited
Navigation: Functionality	Navigation is not prominent; navigation is not consistent; users easily get lost	Navigation is not prominent on all pages; navigation is not consistent on all pages; users can get lost	Navigation is prominent on all pages; navigation is not consistent on all pages; users typically don't get lost	Navigation is prominent on all pages; navigation is consistent on all pages; users don't get lost	Navigation is prominent on all pages; navigation is consistent on all pages; breadcrumbs are embedded in all pages; users don't get lost
Navigation: Click-Throughs	Users can get to some content in four clicks or less.	Users can get to most content in four clicks or less.	Users can get to some content in three clicks or less	Users can get to most content in three clicks or less	Users can get to all content in three clicks or less.
Link Labels	Link label and landing page header are not consistent	Link label and landing page header are rarely consistent	Link label and landing page header are occasionally consistent	Link label and landing page header are mostly consistent	Link label and landing page header are always consistent
Color Contrast*	Significant issues with contrast between color of font and color of background		Some issues with contrast between color of font and color of background		No issues with contrast between color of font and color of background
Accessibility Problems^	# Known Problems # Likely Problems # Potential Problems				

^ Checked using AChecker: http://achecker.ca/checker/index.php

* Checked using CheckMyColours: http://www.checkmycolours.com/

Dimension: Aesthetics					
	Poor	**Below Average**	**Average**	**Above Average**	**Excellent**
Layout: Organization	Content is placed randomly on website; layout is haphazard and messy	Content arranged in a grid; sections, columns, and boxes do not line up	Content arranged in a grid; sections, columns, and boxes sometimes line up	Content arranged in a grid; sections, columns, and boxes mostly line up; layout is nicely balanced	Content arranged in a grid; sections, columns, and boxes perfectly line up; layout is perfectly balanced

Color Palette	No cohesive color palette; visually distracting		Moderately cohesive color palette		Cohesive color palette; visually pleasing
Font	Inconsistent and/or inappropriate fonts; inconsistent font point sizes; difficult to read	Consistent fonts; inconsistent use of font styles (italic, bold, underline); inconsistent application of font point sizes; moderately difficult to read	Consistent and appropriate fonts; appropriate use of font styles (italic, bold, underline); inconsistent application of font point sizes	Consistent and appropriate fonts; appropriate use of font styles (italic, bold, underline); font point sizes vary appropriately; easy to read	Consistent and appropriate fonts; appropriate use of font styles (italic, bold, underline); font point sizes vary appropriately for headings and text; very easy to read
Graphics	Graphics seem randomly chosen; low quality; visually distracting to reader; OR no graphics are included	Few graphics; related to the theme or purpose of the website; medium to low quality; OR very few graphics are included	Some graphics; related to the theme or purpose of the website; medium to high quality; enhance reader interest or understanding; OR some graphics are included	Good balance of graphics and content; are related to the theme or purpose of the website; high quality; enhance reader interest or understanding; balanced with content	Excellent balance of graphics and content; are related to the theme or purpose of the website; high quality; enhance reader interest or understanding; balanced with content
Dynamic Content	Is there dynamic content embedded on the homepage? Yes or No				
Simplicity	Web page too busy; excessive use of graphic elements; poor balance of white space and content; very difficult for users to find information	Web page is somewhat busy; excessive use of graphic elements; imbalance of white space and content; difficult for users to find information	Web page is busy with graphics or web page lacks graphic elements; appropriate balance of white space and content	Web page is simple; has appealing graphic elements; good balance of white space and content; easy for users to find information	Web page is simple and to the point; has appealing graphic elements; excellent balance of white space and content; very easy for users to find information

Dimension: Content					
	Poor	**Below Average**	**Average**	**Above Average**	**Excellent**
Copy	Headings are not used; text is mostly longer paragraphs; content cannot be scanned quickly	Headings are rarely used; text is mostly longer paragraphs; content cannot be scanned quickly	Headings are occasionally used; text is organized into small chunks and longer paragraphs	Headings are consistently used but length or unclear; text is organized into small chunks; content can be scanned quickly	Headings consistently used and are direct and compelling; text is organized into small chunks; content can be scanned quickly
Regularly Updated	No dates evident		Site contains creation date, but no dates for updated information		Site includes creation date and dates for updated information
Prospective Students	No clear section for prospective students; minimal or no admission and program requirement information found on site	No clear section for prospective students; admission and program requirement information found elsewhere on site	Clearly delineated section for prospective students that includes minimal information regarding admissions and program requirements	Clearly delineated section for prospective students that includes some information regarding admissions and program requirements	Clearly delineated section for prospective students that includes all relevant admissions and program requirements
Current Students	No clear section for current students; minimal or no information on graduation requirements, required courses, sequence of courses, and key dates found on site	No clear section for current students; information on graduation requirements, required courses, sequence of courses, and key dates elsewhere on site	Clearly delineated section for current students that includes minimal information on graduation requirements, required courses, sequence of courses, and key dates; no links to student services	Clearly delineated section for current students that includes information on graduation requirements, required courses, sequence of courses, and key dates; some links to student services	Clearly delineated section for current students that includes graduation requirements, required courses, sequence of courses, key dates, and student services
Curriculum and Courses	Minimal information provided about required courses	Course listing of all required courses with short descriptions	Course listing of all required and some elective courses with short descriptions	Course listing of all required and some elective courses with full descriptions	Course listing of all required and elective courses with full descriptions

Faculty Directory	Directory listings with contact information	Directory listings with research areas of interest, and basic contact information	Directory listings with research areas of interest, personal or research group websites, and photo	Directory listings with short bio, research areas of interest, personal or research group websites, and photo	Directory listings with short bio, research areas of interest, recent publications, personal or research group websites, and photo
Student Directory	Directory listings with contact information	Directory listings with advisor, research areas of interest, and basic contact information	Directory listings with advisor, research areas of interest, personal or research group websites, and photo	Directory listings with short bio, advisor, research areas of interest, personal or research group websites, and photo	Directory listings with short bio, advisor, research areas of interest, recent publications, personal or research group websites, and photo
Post Grads and Alumni	Minimal information for post graduates or alumni	Some information for post graduates or alumni	Good information for post graduates and alumni, including career resources	Very good information for post graduates or alumni, including career resources and directory	Excellent information for post graduates or alumni, including career resources, directory, and alumni news and events
Community Resources	No resources for community or professionals	Limited resources for community or professionals	Some resources for community or professionals, including links to events	Moderate resources for community or professionals, including links to research, events and other ways to engage	Excellent resources for community or professionals, including links to research, continuing education, events, and other ways to engage
News & Events	Is there a News & Events section? Yes or No				
Social Media	Which social media are integrated into website?				
Overall Content Coverage	Very poor coverage of information about graduate program	Poor coverage of information about graduate program	Okay coverage of information about graduate program	Good coverage of information about graduate program	Excellent coverage of information about graduate program

Appendix B. Website Content Analysis Scoring Rubric: Research Center Websites

Dimension: Functionality					
	Poor	**Below Average**	**Average**	**Above Average**	**Excellent**
Broken Links*	Many broken links; many link redirects	Few broken links; many link redirects	Few broken links; few link redirects	No broken links; few link redirects	No broken links; no link redirects
Spelling and Grammar^	Significant errors in spelling, punctuation, or grammar	Many errors in spelling, punctuation, or grammar	Some errors in spelling, punctuation, or grammar	Minimal errors in spelling, punctuation, or grammar	No errors in spelling, punctuation, or grammar
Search	No, does not have customized search for website		Has customized search for parent website		Yes, has customized search for website
Homepage Load Time: Desktop	Checked using WebPageTest: Cable (5/1 Mbps 28ms RTT) Connection and Dulles, VA, Test Location: http://www.webpagetest.org/				
Homepage Load Time: Mobile	Checked using WebPageTest: Mobile 3G – Fast (1.6 Mbps/768 Kbps 150ms) Connection and Dulles, VA, Test Location: http://www.webpagetest.org/				
Mobile Friendly#	No, not mobile friendly		Moderately mobile friendly		Yes, mobile friendly

* Checked using W3C Link Checker: https://validator.w3.org/checklink
^ Checked using W3C Spell Checker: http://www.w3.org/2002/01/spellchecker
# Checked using W3C MobileOK Checker: https://validator.w3.org/mobile/

Dimension: Usability					
	Poor	**Below Average**	**Average**	**Above Average**	**Excellent**
Layout: Consistency	Secondary and tertiary pages have many inconsistencies in layout	Secondary and tertiary pages have some inconsistencies in layout	Consistent secondary page layout; tertiary page layouts have many inconsistencies	Consistent secondary page layout; tertiary page layouts have some inconsistencies	Consistent layout throughout secondary and tertiary pages
Navigation: Organization	Poor organization of navigation hierarchy	Good organization of navigation hierarchy; secondary navigation is adequately organized	Good organization of navigation hierarchy; secondary navigation is logically organized	Excellent organization of navigation hierarchy; secondary navigation is adequately organized	Excellent organization of navigation hierarchy; secondary navigation is logically organized

Navigation: Options	Navigation menu has more than 15 items	Navigation has up to 15 items; hidden or dropdown sub-menus are common	Navigation has up to 15 items; hidden or dropdown sub-menus are limited	Navigation menu has 10 items or fewer; hidden or dropdown sub-menus are common	Navigation menu has 10 items or fewer; hidden or dropdown sub-menus are limited
Navigation: Functionality	Navigation is not prominent; navigation is not consistent; users easily get lost	Navigation is not prominent on all pages; navigation is not consistent on all pages; users can get lost	Navigation is prominent on all pages; navigation is not consistent on all pages; users typically don't get lost	Navigation is prominent on all pages; navigation is consistent on all pages; users don't get lost	Navigation is prominent on all pages; navigation is consistent on all pages; breadcrumbs are embedded in all pages; users don't get lost
Navigation: Click-Throughs	Users can get to some content in four clicks or less.	Users can get to most content in four clicks or less.	Users can get to some content in three clicks or less	Users can get to most content in three clicks or less	Users can get to all content in three clicks or less.
Link Labels	Link label and landing page header are not consistent	Link label and landing page header are rarely consistent	Link label and landing page header are occasionally consistent	Link label and landing page header are mostly consistent	Link label and landing page header are always consistent
Color Contrast*	Significant issues with contrast between color of font and color of background		Some issues with contrast between color of font and color of background		No issues with contrast between color of font and color of background
Accessibility Problems^	# Known Problems # Likely Problems # Potential Problems				

^ Checked using AChecker: http://achecker.ca/checker/index.php

* Checked using CheckMyColours: http://www.checkmycolours.com/

Dimension: Aesthetics					
	Poor	**Below Average**	**Average**	**Above Average**	**Excellent**
Layout: Organization	Content is placed randomly on website; layout is haphazard and messy	Content arranged in a grid; sections, columns, and boxes do not line up	Content arranged in a grid; sections, columns, and boxes sometimes line up	Content arranged in a grid; sections, columns, and boxes mostly line up; layout is nicely balanced	Content arranged in a grid; sections, columns, and boxes perfectly line up; layout is perfectly balanced

Color Palette	No cohesive color palette; visually distracting		Moderately cohesive color palette		Cohesive color palette; visually pleasing
Font	Inconsistent and/or inappropriate fonts; inconsistent font point sizes; difficult to read	Consistent fonts; inconsistent use of font styles (italic, bold, underline); inconsistent application of font point sizes; moderately difficult to read	Consistent and appropriate fonts; appropriate use of font styles (italic, bold, underline); inconsistent application of font point sizes	Consistent and appropriate fonts; appropriate use of font styles (italic, bold, underline); font point sizes vary appropriately; easy to read	Consistent and appropriate fonts; appropriate use of font styles (italic, bold, underline); font point sizes vary appropriately for headings and text; very easy to read
Graphics	Graphics seem randomly chosen; low quality; visually distracting to reader; OR no graphics are included	Few graphics; related to the theme or purpose of the website; medium to low quality; OR very few graphics are included	Some graphics; related to the theme or purpose of the website; medium to high quality; enhance reader interest or understanding; OR some graphics are included	Good balance of graphics and content; are related to the theme or purpose of the website; high quality; enhance reader interest or understanding; balanced with content	Excellent balance of graphics and content; are related to the theme or purpose of the website; high quality; enhance reader interest or understanding; balanced with content
Dynamic Content	Is there dynamic content embedded on the homepage? Yes or No				
Simplicity	Web page too busy; excessive use of graphic elements; poor balance of white space and content; very difficult for users to find information	Web page is somewhat busy; excessive use of graphic elements; imbalance of white space and content; difficult for users to find information	Web page is busy with graphics or web page lacks graphic elements; appropriate balance of white space and content	Web page is simple; has appealing graphic elements; good balance of white space and content; easy for users to find information	Web page is simple and to the point; has appealing graphic elements; excellent balance of white space and content; very easy for users to find information

Dimension: Content					
	Poor	**Below Average**	**Average**	**Above Average**	**Excellent**
Copy	Headings are not used; text is mostly longer paragraphs; content cannot be scanned quickly	Headings are rarely used; text is mostly longer paragraphs; content cannot be scanned quickly	Headings are occasionally used; text is organized into small chunks and longer paragraphs	Headings are consistently used but length or unclear; text is organized into small chunks; content can be scanned quickly	Headings consistently used and are direct and compelling; text is organized into small chunks; content can be scanned quickly
Regularly Updated	No dates evident		Site contains creation date, but no dates for updated information		Site includes creation date and dates for updated information
Researcher/ Personnel Directory	No directory listings	Directory listings with basic contact information	Directory listings for with basic contact information and short biography	Directory listings for with basic contact information, short biography, and photo	Directory listings with basic contact information, short biography, photo, and links to recent publications and/or recent projects
Research	Short descriptions of select research projects.	Short descriptions of research areas.	Short descriptions of research areas; select research projects, with links to related researchers and/or publications	Detailed information about research areas and initiatives; selective links to relevant publications, grants, projects, and researchers.	Detailed information about research areas and initiatives; robust links to relevant publications, grants, projects, and researchers.
Publications	No information about organization's publications	Selective bibliography of organization's publications	Extensive bibliography of organization's publications	Open and unmediated access to organization's publications; browsable	Open and unmediated access to organization's publications; searchable and browsable

Education (For Students)	No information about related educational opportunities	Information about continuing education opportunities	Information about related undergraduate and/or graduate programs; continuing education opportunities	Information about related undergraduate and graduate programs and co-curricular activities; continuing education opportunities	Information about related undergraduate and graduate programs and co-curricular activities; continuing education opportunities; job, internship, or fellowship information
About	Does not include information about the purpose of the organization	Includes basic information about the purpose of the organization	Includes mission and vision of organization	Includes mission and vision of organization and goals and objectives or strategic plan	Includes mission, vision, goals and objectives of organization; includes strategic plan
News	Is there a News section? Yes or No				
Events	Is there an Events section? Yes or No				
Annual Reports	Does the website provide access to the organization's annual reports? Yes or No				
Support	Does the organization provide a space for donations or requests for support? Yes or No				
Contact	Does the organization provide ways to get in contact? Yes or No				
Social Media	Which social media are integrated into website?				
Overall Content Coverage	Very poor coverage of information about organization	Poor coverage of information about organization	Okay coverage of information about organization OR inappropriate coverage of organization	Good coverage of information about organization	Excellent coverage of information about organization