



UNC
INSTITUTE FOR
THE ENVIRONMENT

ENST 698—Environmental Capstone
Spring 2010

Sustainable Research Inventory
Final Report

Elizabeth Blayney

Jena Collier

Allie Efland

Kristen Fromal

Kelsie Grabert

Additional contributions to this report by capstone advisors:

Elizabeth Shay, PhD, Institute for the Environment

Cindy Shea, Director of the Sustainability Office

Client: Vice-Chancellor's Sustainability Advisory Committee, University of North Carolina, Chapel Hill

Table of Contents

- Purpose3
- Sustainability Curriculum vs. Sustainability Research3
 - Sustainability Curriculum 3
 - Sustainability Inventory 3
- AASHE STARS Credit4
 - Credit 15: Sustainability Research Identification 4
 - Credit 16: Faculty Involved in Sustainability Research 5
 - Credit 17: Departments Involved in Sustainability Research..... 6
- Findings and Results6
- Research Methods7
 - Research Flow Chart..... 7
 - RAMSeS 7
 - Collexis 8
 - Department Websites 10
 - Institute for the Environment Website 10
 - Personal Contact..... 11
- Obstacles12
 - Faculty Classification 12
 - Research Documentation 13
- UNC and Beyond14
- Next Steps15
 - Future Project Generation 15
 - AASHE 16
- Appendix17
 - Survey 17
 - Email to Department Chairs 18
 - Email to Faculty A..... 18
 - Email to Faculty B 19

Purpose

The purpose of this project is to inventory the sustainability research occurring at the University of North Carolina at Chapel Hill (UNC-Chapel Hill). This project is a companion to the curriculum inventory capstone completed in spring 2009. Both capstones employed the new Sustainability Tracking, Assessment & Rating System (STARS) developed by the Association for the Advancement of Sustainability in Higher Education (AASHE); both were conducted at the request of the UNC-Chapel Hill Vice-Chancellor's Sustainability Advisory Committee.

Carolina is a leader in meeting the General Administration's directive for all institutions in the UNC system to adopt sustainability as a core value. This project benefits the entire campus community by providing a comprehensive inventory of sustainability-related research initiatives. Users can search the inventory to learn about opportunities for future research and collaborations.

Sustainability Curriculum vs. Sustainability Research—Differences in Inventory

The AASHE Sustainability Tracking, Assessment and Rating System (STARS) evaluates the incorporation of sustainability by universities and colleges into curriculum, research, and business operations. The rating system assesses the level of sustainability integration at a particular college or university. The credits are divided into the following three main categories, each of which has various subcategories: Education & Research; Operations; and Planning, Administration & Engagement.

Inventorying sustainability courses and sustainability research involves the same definitions and many of the same faculty, but the methods of compilation vary greatly between the two groups. To develop a description of sustainability, the curriculum team referenced articles from the Proceedings of the National Academy of Sciences, experts in the field, and their own knowledge to develop the description noted later in this report. A group of faculty and staff, under the leadership of Cindy Shea, Director of the Sustainability Office at UNC later analyzed and approved a definition of sustainability. The curriculum capstone group scrutinized the course description for each class listed in the graduate and undergraduate bulletins to determine whether or not it was sustainability-related. This technique served as their primary method of data compilation. To double-check their inventory results, the group sent out surveys to key departmental leaders, listing classes they had identified as being sustainability focused or related. The survey recipients then had the opportunity to affirm or refute the curriculum inventory group's findings, in addition to suggesting other courses that may involve sustainability.

By contrast, the sustainability research group employed multiple UNC research databases, departmental websites, emails, and surveys to produce a comprehensive inventory of sustainability-related research at UNC-Chapel Hill. Because of the complex web of research projects that often crossed multiple disciplinary lines, up to three databases had to be searched for each department. Moreover, the research of some professors was absent from all databases, and instead had to be confirmed through private email and departmental surveys. Still, it was impossible to confirm the research interests of some faculty even after searching multiple databases, sending emails, and analyzing survey responses. The team faced the challenge of sorting through multiple professionals titles to demarcate the population of faculty to consider in the inventory. While the curriculum inventory team had a relatively clear-cut population of instructors to survey for their compilation, the research inventory team consulted multiple sources and sifted through thousands of abstracts. An additional source of ambiguity lies in the fact that AASHE STARS, only recently established, has somewhat limited guidelines for classifying research as sustainability-related.

AASHE STARS Credit

This capstone explored three credits under the Education and Research (ER) category and Research subheading in the AASHE STARS framework, which recognizes institutions that are conducting research related to, or focused on, sustainability. The three research credits evaluated during this project were ER Credit 15: Sustainability Research Identification; ER Credit 16: Faculty Involved in Sustainability Research; and ER Credit 17: Departments Involved in Sustainability Research. The remaining credits in the research section of the ER category are ER Credit 18: Sustainability Research Incentives and ER Credit 19: Interdisciplinary Research in Tenure and Promotion.

ER Credit 15: Sustainability Research Identification (3 points available):

Credit 15 recognizes institutions that have identified research, faculty scholarship, and creative inquiry related to sustainability. This credit requires adaptation of a definition of sustainability research that provides a foundation for measurement and goal setting. The three criteria that must be met include:

- Part 1: Institution has developed a definition of sustainability research

The research inventory team reviewed the description developed by the spring 2009 curriculum inventory team, who created a working description based on published articles from the National Academy of Sciences (among other sources), personal experience and faculty input. Subsequently, a group of UNC faculty defined sustainability as **“an interdisciplinary field focusing on the dynamic relationship**

between the environment, economy, and society. Sustainable systems preserve and advance social equity, economic prosperity, and the healthy functioning of ecological systems now and in the future.”

- Part 2: Institution has identified its sustainability research activities and initiatives and should include all research centers, laboratories, departments, and faculty members whose research focuses on or is related to sustainability (1 point).

The Sustainability Office collects and disseminates general information about academic departments with a strong sustainability research focus, located within their academic section: <http://sustainability.unc.edu/Default.aspx?tabid=70>. In addition, the Institute for the Environment maintains a collection of electronic pointers to relevant research: <http://sustainability.unc.edu/Academics/tabid/55/Default.aspx>.

- Part 3: Institution makes its sustainability research inventory publicly available online (1 point).

The research inventory, consisting of a searchable spreadsheet of over 250 faculty members sorted by several different fields and offering links to individuals and programs, will be posted at both the Sustainability Office and the Institute for the Environment in June of 2010.

ER Credit 16: Faculty Involved in Sustainability Research (10 points available):

Credit 16 recognizes institutions where faculty members are conducting research on sustainability topics. This credit appreciates institution’s faculty members that are conducting research on sustainability topics. Institutions earn the maximum of 10 points for this credit when at least 25% of faculty is engaged in sustainability research. Incremental points are based on the percentage of faculty conducting sustainability research.

Factor	<i>Multiply</i>	Faculty Members Conducting Sustainability Research	<i>Divide</i>	Total Number of Faculty Members	<i>Equals</i>	Points Earned
40	×	288	÷	2650	=	4.35

ER Credit 17: Departments Involved in Sustainability Research (6 points available):

Credit 17 recognizes institutions where sustainability research is being conducted in many departments. Institutions earn the maximum of six points for this credit when at least 75 percent of departments are engaged in sustainability research. Incremental points can be assigned if less than 75 percent of the departments at an institution are engaged in sustainability research.

Factor	<i>Multiply</i>	Departments that Conduct Sustainability Research	<i>Divide</i>	Total Number of Departments that Conduct Research	<i>Equals</i>	Points Earned
8	×	35	÷	81	=	3.46

Finding and Results

Based on our database of faculty research and active home schools and departments, the final counts are as follows:

CREDITS

- ER Credit 15: 3 out of 3 points
- ER Credit 16: 4 out of 10 points
- ER Credit 17: 3.5 out of 6 points
- Total: 10.5 out of 19

FACULTY CONDUCTING RESEARCH

- Professional Schools: 152
- College of Arts and Sciences: 136
- Total: 288 out of 2,650

PERCENTAGES

- Departments: 43.2%
 - Faculty: 10.9%
-

Research Methods

The complexity of this project required an intricate system with which to approach the survey of research at the University. Multiple sources were used. Figure 1 provides an overview of the stepwise search for faculty research information.

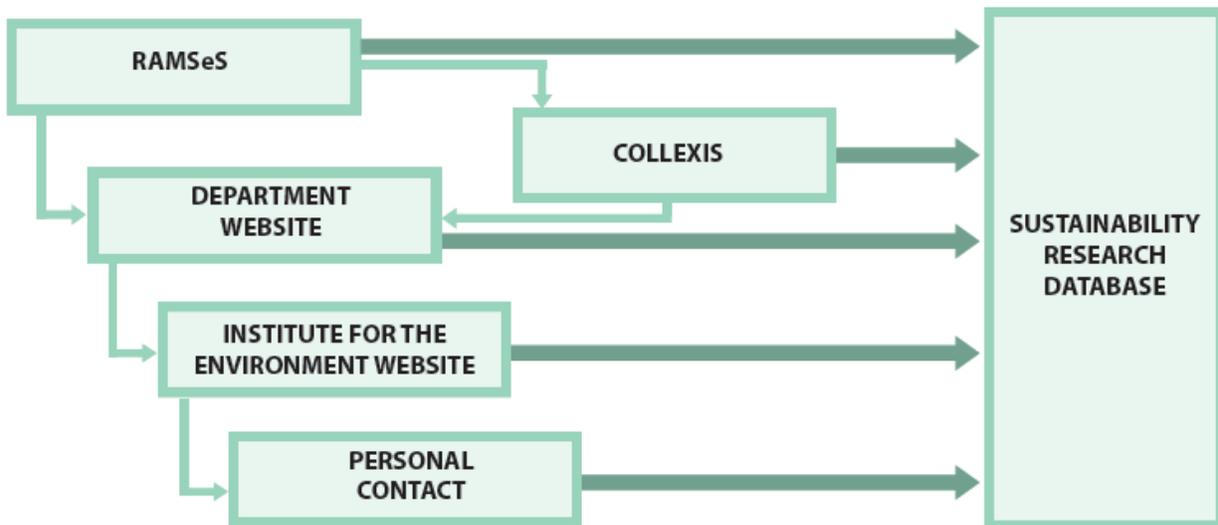


Figure 1. Flow chart of data sources to determine inclusion in research database.

RAMSeS

RAMSeS serves as the primary search engine, providing access to information about active research occurring throughout UNC. The purpose of the RAMSeS information system is to manage “research proposals as well as interact with the administrative offices in the management and closeout of funded proposals.” For this research project, the main benefit of RAMSeS is the multitude of searches one can perform. Although the focus was to search by department, one is able to search by investigator, sponsor, and school. When using RAMSeS, the database searches provide information including title of the proposal, name of the primary investigator, an abstract, type and amount of funding, sponsor, project status, and project start date.

Search Procedure

1. Open the RAMSeS website (www.ramses.unc.edu)
2. Select “Reporting” from the toolbar at the top of the page
3. Under “Proposals,” click “By Department”
 - a. Select accordingly to search by investigator, lead investigator, or school
4. Change the “Begin date” to 1/01/2007
5. Click the department box and select the departments you want to search by
6. Select “Continue”
7. Select “View Report”

8. View the researcher's abstract to determine if the research is sustainability related
 - a. If unsure, check the department's website for information on the researcher (see *Department Website* for more information)
9. Check the "Other Personnel" category to see if there are other researchers listed
 - a. If so, do a Google search of "first name last name UNC"
 - i. If the person is a FACULTY member (**not** post-doc or grad student), list them in "sheet 1" of the database
10. If the research fits the established criteria for sustainability-related, list the researchers and their information in "sheet 1" of the spreadsheet
 - a. If unsure, list their information on "sheet 2"

Proposals By Department

Department: Admin Appt

Begin Date: End Date:

[Export to Excel](#) Page: 1 2 3 4 5 6 7 8 ... Showing Results 1 - 25 of 271

Proposal Number	Title	PI	Other Personnel	Award Admin Dept Ilo	Award Admin Dept	PI Home Dept Ilo	PI Home Dept	Sponsor Type	Sponsor	Sponsor
07-2202	NRSA Brandon Aragona Fellow, Dopamine, accumbens signalling & classical conditioning.	Carelli, Regina	Aragona, Brandon	3258	Psychology	3258	Psychology	Federal	National Institute on Drug Abuse	
07-2295	Graduated Recovery Intervention for Early Schizophrenia	Penn, David	Perkins, Diana	3258	Psychology	3258	Psychology	Federal	National Institute of Mental Health-NIH	
07-2299	Improving the Assessment of Juvenile Bipolar Spectrum Disorders	Youngstrom, Eric	Youngstrom, Jennifer	3258	Psychology	3258	Psychology	Federal	National Institute of Mental Health-NIH	
07-2325	Diamoxin and	Bauer		3258	Psychology	3258	Psychology	Federal	National	NSF 06-

Collexis

Collexis has developed a searchable database tool to promote collaboration among all types of researchers at UNC. Collexis serves as the secondary method of searching because, at this time, the database is comprehensive only for the health-related departments. With Collexis one can search by keyword of interest (i.e. "sustainable" or "organic") or by the last name of a researcher. Collexis allows one to perform specific searches on the exact subjects or persons of interest. Another benefit of Collexis is that the search results are ordered by concept, so that one can establish whether a researcher is interested in "organic chemistry" or "organic health foods". Once a concept is chosen, a list of associated researchers and related concepts is given. From there, one can select a researcher in order to learn about his or her concepts of expertise (by relevance) and specific research projects, including links to his or her publications, abstracts, contact information, and the school/department to which they belong.

Search Procedure

1. Open the Collexis website (<http://www.researchprofiles.collexis.com/unc/>)
2. Type keyword of interest into the “Search experts by concept” box
3. Click search
4. If applicable, select a more specific concept
5. Select an expert from the list
6. Select the publications tab
7. Going through the list, select “Show abstract” on publications that may possibly be sustainability related
 - a. Publications are listed chronologically in descending order, most recent being at the top. Be sure to select only abstracts published AFTER January 1, 2007 (for the 3-year period used in this assessment, or later start dates for updated assessments, as needed).
8. Read the abstract to determine if the publication is sustainability related or focused.
9. If the research qualifies as sustainability-related according to established criteria, list the researchers and their information in “sheet 1” of the spreadsheet
 - a. If unsure, list their information on “sheet 2”

Home

Search experts by concept

by last name

Browse Experts of Epidemiology

→ Alexander, Lorraine K	→ North, Kari E
→ Baric, Ralph S	→ Olshan, Andrew F
→ Behets, Wilfrida F	→ Pettifor, Audrey E
→ Bensen, Jeannette T	→ Poole III, Charles L
→ Casteel, Carri H	→ Richardson, David B
→ Chen, Jiu-Chiuan	→ Rosamond, Wayne D
→ Coeytaux, Remy R	→ Rose, Kathryn M
→ Daniels, Julie L	→ Schoenbach, Victor J
→ Dorsey, Kathleen C	→ Schroeder, Jane C
→ Evenson, Kelly R	→ Siega-Riz, Anna Maria
→ Gammon, Marilie D	→ Sims, Amy C
→ Hartmann, Katherine E	→ Stamm, Lola V
→ He, Ka	→ Thomas, James C

Search experts by concept
 by last name

Alexander, Lorraine K [Help us make your profile perfect](#)

Research Profile | **Publications**

<p>Disorders</p> <ul style="list-style-type: none"> <input type="checkbox"/> Coronavirus Infections <input type="checkbox"/> Myocarditis <input type="checkbox"/> Dilated Cardiomyopathy <input type="checkbox"/> Coronaviridae Infections <input type="checkbox"/> Animal Disease Models <input type="checkbox"/> Heart Failure <input type="checkbox"/> Pleural Effusion <input type="checkbox"/> Condylomata Acuminata <input type="checkbox"/> Papillomavirus Infections <input type="checkbox"/> Death, Sudden, Cardiac <input type="checkbox"/> Tumor Virus Infections <input type="checkbox"/> Hypertrophy 	<p>Physiology</p> <ul style="list-style-type: none"> <input type="checkbox"/> Organ Size <input type="checkbox"/> Lymphocyte Activation <input type="checkbox"/> Aptitude <input type="checkbox"/> Awareness <p>Genes & Molecular Sequences</p> <ul style="list-style-type: none"> <input type="checkbox"/> Open Reading Frames <input type="checkbox"/> Amino Acid Sequence <input type="checkbox"/> Viral Genome <input type="checkbox"/> Oncogenes <p>Living Beings</p>	 <p>Alexander, Lorraine K</p> <p>Epidemiology</p> <p>Email mystery1@unc.edu</p>
--	---	---

Department Website

UNC department websites were referenced to form an initial idea about which types of research occur in each department, and by whom. The UNC departmental websites allow one to flag potential faculty members involved in sustainability research and obtain more information about specific faculty's current projects, research interests, and backgrounds.

Search Procedure

1. Open the department of interest's UNC website
 - a. For example, <http://geography.unc.edu/>
2. Navigate to the department's research page, if there is one, to become familiar with the department itself and what kind of research primarily occurs
3. If there is a faculty page, use it to investigate each faculty member, taking note of areas of expertise and past/present/future research endeavors

UNC's Institute for the Environment Website

The UNC Institute for the Environment website provides a search engine for faculty working on environmental topics. The Institute for the Environment is recognized at Carolina as a leader in sustainability teaching and research, and many of the faculty members affiliated with the Institute are engaged in sustainability research. The search allows one to query by name, department, topic, keyword, or region of study. This website supplements the aforementioned

search methods by providing names of potential faculty and collaborators working on sustainability topics.

Search Procedure

1. Open the Institute for Environment's Website
(http://www.ie.unc.edu/content/community/env_faculty.cfm)
2. Search by department, keyword, or research interest
 - a. Our group focused on the "department" search
3. Click on the researcher's name for more details regarding his or her work
 - a. Use CV or personal websites to better understand research projects
4. Document research projects, dates, and contact information in the spreadsheet

Search by Name:

NOTE: you don't need to type the entire name, just a few letters. Example: Typing "Jo" will return Jones, Joseph, etc.

First Name:

Last Name:

[List all Environmental Faculty](#) or click on a letter below:
A B C D E E G H J K L M N O P R S I V W X Y Z

Search by Unit/Department:

--- No Department selected ---
Ackland Museum
Albemarle Ecological Field Site
Anthropology
Applied Mathematics Program

Select multiple by holding down the "Ctrl" key

Search by Research Interest:

Personal Contact

Personal contact was extended to individuals when online research ends with unanswered questions. If a department was not in any of the research databases and its website was vague, an online survey (fig. 3) was emailed (fig. 4) to the department chair to gain an understanding of who in the department might be conducting sustainability-related research. Based on the survey responses, individual faculty members were emailed (fig. 5) to determine project topics, research dates, etc. A similar email was sent out to faculty identified by the search methods described earlier, when more information was needed for a complete database entry. A generalized email (fig. 6) was sent to faculty members with sparse or ambiguous research details.

Figure 2 shows that, while RAMSeS provided the most entries, RAMSeS was also the primary research source for this group. Many of the identified research entries could show up in multiple sources.

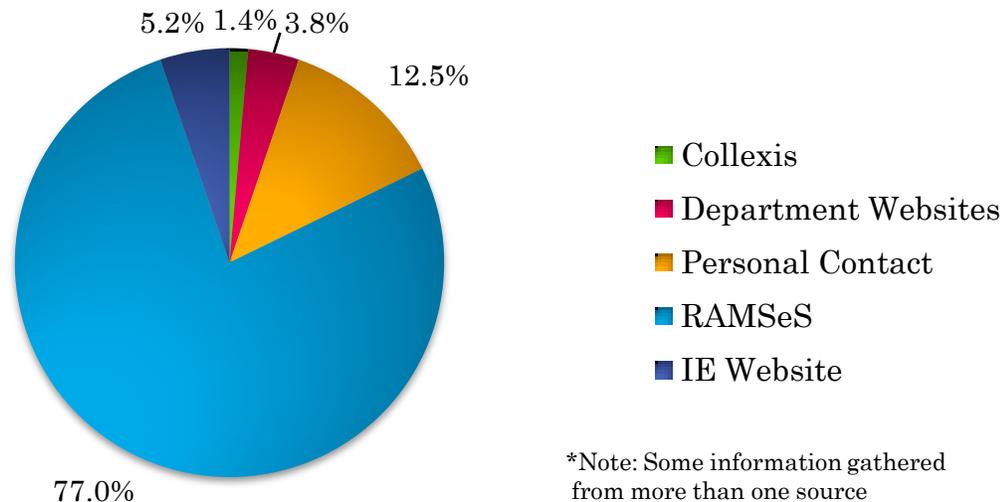


Figure 2. Percentage of database entries retrieved from each of the research methods.

Obstacles

The research inventory team encountered several barriers to a clean and authoritative assessment of sustainability-related research at UNC-Chapel Hill, including ambiguity about the composition of the research population, and methods used to document research activity.

Faculty count

In an effort to ascertain the total number of faculty members at UNC, several complications arose. Whether to include EPA Non-Faculty in the denominator was unclear. EPA Non-Faculty is a designation applied to many different types of UNC employees. Although some members of this group conduct research (including some known EPA non-faculty researchers working in the sustainability field), many others are involved in administrative roles and therefore should not be included in the count. It was concluded that the professional capacities of EPA Non-Faculty were so varied and removed from academics (specifically, teaching and research) that to include them would misrepresent the research activity underway at UNC-Chapel Hill and undermine the purpose of this inventory. This decision was made to comply with AASHE's standards and guidelines, which specifically state "total number of faculty" to be used as the denominator in our research. Nevertheless, lecturers were included in the database as they hold an appointment

at UNC, interact with students, and perform research in a similar capacity to tenure or tenure-track professors.

Whether to include research and clinical professor in the database along with traditional professors (assistant, associate and full professors) and adjunct professors was a topic of debate. It was decided to include research, but not clinical professors, as the majority of clinical professors are likely to be more involved in patient relations rather than direct research. Clinical professors represent a population straddling the line between practice and academia, and are not strictly part of the teaching and research-oriented faculty that the project is inventorying.

The final number of faculty was derived from the Institutional Research website (<http://oira.unc.edu/permanent-full-time/part-time-employees-and-full-time-equivalent-by-school-and-division-fall-2006.html>), as well as communication with Chris Eilers, Applications Analyst for Institutional Research. Mr. Eilers stated total faculty numbers include adjunct professors and lecturers under “Fixed-Term Faculty.” This division also includes faculty not tenured or on the tenure-track. Faculty numbers include both research and clinical professors. However, clinical professors have been isolated and removed from the total counts. Finally, Mr. Eilers explained that EPA Non-Faculty includes many types of employees from all areas of the University. Nonetheless, many EPA Non-Faculty with an academic focus are listed as lecturers, which places them in the faculty count.

Documentation of research

While searching departments to identify faculty to include in the sustainability research database, it was noted that the methods of research documentation varied among departments. Some departments relied heavily on RAMSeS, while others documented most of the research on department websites. As a result, it was necessary to modify the search procedure based on these variations in documentation. This required members of the capstone group to modify search procedures based on the information available from the department of interest. These differences led to vagueness as to whether research was funded or unfunded, and if funded, by which organization. If using RAMSeS, information on funding amount and source was available, but reading CVs with publication titles did not normally impart this type of information.

In the Department of Romance Languages, some of the abstracts found on RAMSeS were written in a foreign language, making it difficult to determine if the research being described was sustainability-related. In such cases, personal contact was extended to a department head or individual researcher through the aforementioned surveys, emails, and phone calls. Some of these efforts were successful in garnering responses, yet some departments were unresponsive to contact.

The project advisors were able to provide additional information about the types of research being conducted at UNC and possible contacts, simply from personal knowledge. With input from the project advisors, a list researchers who might be expected to be engaged in sustainability-related research was developed. This process was helpful as another means of double checking the initial search and creating a more complete research database.

It is possible that some faculty conducting sustainability-related research are not documented in the final research database, despite every effort to conduct an accurate and all-encompassing search. The diverse group of faculty at UNC, the sheer size of the university, the number of research centers and institute, and the inclusion of the professional schools, makes it difficult to ensure that all research was uncovered. Furthermore, it was impossible to include research that was not documented. Some faculty who teach sustainability-related courses could reasonable be presumed to conduct at least some sustainability-related research. However, these faculty members were not included in the database unless specific research was identified. When personal contact was used as the means of determining the nature of the research, non-response to inquiries also prevented inclusion in the database.

UNC and Beyond

The AASHE STARS credits for research are awarded based on percentages of faculty members conducting sustainability related research within the University. The University of North Carolina at Chapel Hill is a large institution consisting of the College of Arts and Sciences—the largest academic unit on campus, and many professional schools including Kenan-Flagler Business School, Gillings School of Global Public Health, School of Law, Government, Medicine, Journalism and Mass Communication, Nursing, Social Work, Dentistry, Pharmacy and Information and Library Sciences. The majority of sustainability research occurs in the professional schools.

However, the total amount of funded research overshadows the sustainability-related research. External research funding at UNC-Chapel Hill totaled \$716 million in 2009. The National Institutes of Health (NIH) is traditionally the University's largest source of research funding. Hence, the School of Medicine attracted the largest proportion of research funding, about \$349.6 million, or 49% of the total. Yet a very small percentage of faculty in the School of Medicine are conducting sustainability-related research. Therefore, Tier I research universities like UNC-Chapel Hill are largely precluded from earning as many credit points as smaller, liberal arts colleges. Because of the volume of research underway at this large research institution with multiple professional schools, the percentage of sustainability research may be low in comparison to small liberal arts colleges with few or no professional schools. Some mechanism

for mediating these distinctions at various tertiary institutions may better reflect the reality of sustainability-related research underway at a university like UNC-Chapel Hill.

The research team responsible for documenting the inventory on sustainability related research is another interesting aspect of this project to compare to other institutions. This particular capstone is made up of a team of five students diligently working to find the research projects that are sustainability related from each department and professional school at UNC. At another school, an employee or staff member might be responsible for this task. With less staff on the assignment, the upshot of a similar project may include a different definition of sustainability and different methods for locating the necessary information. As students, this capstone took the time to understand the definition of sustainability, divide the departments and schools among team members, and cumulatively dedicate massive amounts of time to develop a compilation of sustainability related research.

Over-counting research projects due to a loose definition of sustainability is one possible risk of using a university staffer for this particular project. This group compiled an accurate database by consulting other members' definitions of sustainability and the research criteria. One person's perspective might not be comprehensive or informed enough to evaluate each research project, resulting in an incorrect count. Additionally, the collective amount of time and work inputs from the team seems unfathomable for just one individual. This could possibly lead to a glossing over of nuances and a less-robust representation of sustainability-related research conducted at a college or university.

Next Steps

This assessment of sustainability-related research at UNC-Chapel Hill was a useful exercise that generated some near-term results, and revealed the need for additional work on several fronts.

UNC-Chapel Hill

The goal of this project was to create a tool: a database containing all of the faculty members conducting sustainability related research at UNC-Chapel Hill. The purpose of doing so is to award the University credits under AASHE STARS and facilitate future sustainability-related research at UNC-Chapel Hill. The compilation of faculty conducting sustainability-related research has been created, and the following task remains to complete the process:

- ✓ Continue to develop comprehensive inventory of faculty conducting sustainability related research by department through a thorough investigation of University resources

- ✓ Post database on the Sustainability Website
- ✓ Enter data into AASHE STARS reporting tool

It will be the responsibility of future project members, whether students or university staff, to execute these next steps. The project advisors will remain involved in future efforts, to provide continuity and advice.

AASHE

Throughout the process of compiling the database of sustainability researchers at UNC, certain obstacles arose that should be remedied. The majority of these complications were due to ambiguous definitions from AASHE. Because the guidelines provided by AASHE are broad and generic, when questions arose, the group was left to make its own subjective decisions about what constitutes sustainability and who should be counted as faculty. This lack of clarity reduces the ability to compare one institution to another.

A detailed description of who at the institution is considered faculty could eliminate considerable confusion in the future. In future protocols, AASHE might address which types of faculty on campus should be included, by discussing the various types of faculty categories common on most campuses (academic, research, clinical). Such a reporting framework might still allow the assessors at individual campuses some freedom to make a final decision after reviewing AASHE guidelines and considering the structure at their home campus.

A similar lack of clarity was revealed in the process of deciding what precisely constitutes research. For instance, the database from this project focuses on professors who have obtained funding for their research or published papers. Some professors may be excluded if their research is unfunded or unpublished. Additional discussion and guidance from AASHE could clarify this matter.

Despite complications and uncertainties that arose during this review of sustainability-related research, ultimately the assessment process itself may prove to be a useful exercise for the students and staff involved. Certainly the pursuit of more awareness of and appreciation for the broad range of interesting and timely research underway in many departments, school, and institutes at UNC-Chapel Hill can only further the University's stated mission to advance sustainability across the campus.

Appendix

Figure 3. Survey emailed to department chairs.

- 1. Which of the following faculty are involved or have been involved in sustainability research within the last THREE YEARS (with sustainability defined as: “an interdisciplinary field focusing on the dynamic relationship between the environment, economy, and society. Sustainable systems preserve and advance social equity, economic prosperity, and the healthy functioning of ecological systems now and in the future.”)?**

- Joanne Hershfield
- Michele Tracy Berger
- Karen M. Booth
- E. Jane Burns
- Emily Susan Burrill
- Barbara J. Harris
- Tanya L. Shields
- Silvia Tomášková
- Annegret Fauser
- Other (please specify)

Figure 3. Survey emailed to department chairs.

Professor _____,

My name is _____, and I am a part of an ENST capstone group at UNC working with Cindy Shea, Director of Sustainability Office, Vice Chancellor's Sustainability Advisory Committee. We are using STARS ([Sustainability Tracking Assessment and Rating System](#)), offered by the Association for the Advancement of Sustainability in Higher Education (AASHE)—a nationwide program dedicated to assessing sustainability in institutions of higher education while providing tools and resources to help them become more sustainable. AASHE STARS involves reviewing all aspects of a university, from research and education to grounds and buildings.

I have created a [quick survey](#) that will help me identify that faculty in the French department that I should contact to learn more about their research. Your response is vital to ensure research occurring in the French department is included in this important database.

Thank you very much for your help. Feel free to email me with questions.

Figure 4. Email sent to department chairs, with survey attachment.

Professor _____,

My name is _____, and I am a part of an ENST capstone group at UNC working with Cindy Shea, Director of Sustainability Office, Vice Chancellor's Sustainability Advisory Committee. We are using STARS ([Sustainability Tracking Assessment and Rating System](#)), offered by the Association for the Advancement of Sustainability in Higher Education (AASHE)—a nationwide program dedicated to assessing sustainability in institutions of higher education while providing tools and resources to help them become more sustainable. AASHE STARS involves reviewing all aspects of a university, from research and education to grounds and buildings.

My initial research has indicated it is likely you are conducting sustainability research. If this is the case, would you **please provide the years between 2007-present that you have been conducting sustainability research**? The information you provide will be entered into a database for that others interested in sustainability research can query.

A group of UNC faculty has defined sustainability as “an interdisciplinary field focusing on the dynamic relationship between the environment, economy, and society. Sustainable systems preserve and advance social equity, economic prosperity, and the healthy functioning of ecological systems now and in the future.”

I appreciate your time and thank you in advance for your cooperation. I will gladly call you in a week if

Figure 5. Follow up email sent to faculty after initial research

Professor _____,

My name is Elizabeth Blayney and I am a part of an ENST capstone group at UNC working with Cindy Shea, Director of Sustainability Office, Vice Chancellor's Sustainability Advisory Committee. We are using STARS ([Sustainability Tracking Assessment and Rating System](#)), offered by the Association for the Advancement of Sustainability in Higher Education (AASHE)—a nationwide program dedicated to assessing sustainability in institutions of higher education while providing tools and resources to help them become more sustainable. AASHE STARS involves reviewing all aspects of a university, from research and education to grounds and buildings.

Our group's goal is to compile a list of UNC faculty members involved in research that is focused on or related to sustainability. Our primary searches have indicated that your current research (Please provide approximate dates) may be tied to sustainability. In order for us to create the most accurate list possible, we ask that you confirm whether or not your research involves sustainability. Additionally, if you have any key collaborators who are also involved in sustainability research, it would be helpful to have their contact information as well.

A group of UNC faculty has defined sustainability as “an interdisciplinary field focusing on the dynamic relationship between the environment, economy, and society. Sustainable systems preserve and advance social equity, economic prosperity, and the healthy functioning of ecological systems now and in the future.”

I appreciate your time and thank you in advance for your cooperation. I will gladly call you in a week if email is not your preferred method of communication.

Figure 6. Broad email used when research goals were ambiguous.