

# Hand in Hand

## Partners in Teaching, Learning, & Assessment Clarion University

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### November 2008

**Workshop—Nov. 21<sup>st</sup>.** *Seeking the balance: Efficient and effective responses to student papers.* Advising Center, Becht, 3:30-5pm.

**Informal meetings, Nov. 7, Dec. 12.** Michelle's at 3:30pm.

### Research as effective teaching

~ **WILLIAM BARNES (BIOLOGY),  
LAURIE OCCHIPINTI (AGES),  
AND SUSAN PREZZANO (AGES)**

**A MAJOR CHALLENGE** for educators at undergraduate universities is fitting research into a schedule fully loaded with teaching and service. While faculty at research institutions routinely incorporate graduate students into projects, undergraduates are typically considered too inexperienced to participate in research, leaving faculty with the option of performing independent research in the “spare moments” left over in their busy academic schedules.


Our recent participation in workshops

and conferences sponsored by the Council on Undergraduate Research <<http://www.cur.org/>> fundamentally shifted our perception of the feasibility of student/faculty research. The mission of the Council is to support and promote high-quality undergraduate student/faculty collaborative research and scholarship. The Council emphasizes an “in-load” model where collaborative research becomes the primary tool for teaching *within* the classroom. Projects are constructed to accommodate the



newness of undergraduates to research without sacrificing contributions to scholarship. This perspective makes student/faculty research an integral part of teaching rather than an additional responsibility.

The following articles provide

examples from Clarion faculty who have made research a major component of their teaching. We hope that these examples will generate discussions on the costs and benefits of expanding research within the classroom. 

Note: The Clarion University web page on undergraduate research is coming soon.

### Crouching research, hidden problem

~ **HERB LUTHIN (ENGLISH)**

**LINGUISTICS IS** as much something you *do* as something you learn in a book, so any time I can think of a way to get my students actively involved in research or fieldwork, I go for it. Over the years I have done a number of student-powered research projects. The longest running by far is a dialect survey I initiated in my “American Voices” class (ENG 353) when I first came to Clarion oh-so-many years ago. While most “prefab” dialect surveys in textbooks rely on the diversity of their students’ backgrounds to garner results, our student population is so heavily local that my attempts to use them fell flat—everyone had the same answer to every question. So I decided to turn our lemons into lemonade, and narrowed the scope of the survey to Western Pennsylvania exclusively. Together, my students and I designed a questionnaire of some 40 items that focused on dialect expressions they knew were subject to variation within WPA itself. *Do you go SLEDDING or SLED-RIDING? Is your neighbor NOSY or NEBBY? Do you attach your hose to a SPIGOT or a SPICKET?*

### What is Hand in Hand?

*Hand in Hand* is a monthly e-newsletter published by Partners in Teaching, Learning and Assessment at Clarion University. *HiH* is dedicated to recognizing good teaching, fostering excellence in teaching, and creating an environment that fosters learning among students and faculty alike. Partners' activities and *HiH* are supported by a Presidential Advancement grant.

We encourage submissions to *HiH* that focus on general rather than discipline-specific issues in teaching, especially articles that are creative, respectful, and recognize the best in all of us. Articles can be on teaching philosophies, technology, pedagogy, or book reviews, but should be no more than 600 words. Articles should be submitted for review in Word to [jslattery](mailto:jslattery). More information on submissions can be found at <http://psy1.clarion.edu/HiH/HiHguidelines.pdf>

Classes give me laws and theories; undergraduate research gives me skill and discovery, and has made me passionate about a future in science.

~Shanna Bowersox (Biology)

*Have you ever wanted to REDD UP your room?* Questions like these, we hoped, would reveal something about Western Pennsylvania's changing cultural patterns, settlement history, and language values.

The Western Pennsylvania Dialect Survey initially was a traditional, hands-on field survey: students took our questionnaire and ventured forth to find subjects, young and old, willing to take the survey. Back in the "lab," students sorted through hundreds of answer sheets, mapping responses painstakingly by hand, using colored pencils to distinguish variants—needless to say, a laborious process. Then, when the internet came along, I had the idea to place the entire questionnaire on the web. I still send students out with paper forms to interview hometown friends, neighbors, and family—face-to-face interaction is still a key part of the experience—but they return to school and enter their data into the online database.

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Any time I can think of a way to get my students actively involved in research..., I go for it.


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Although the internet has significantly expanded our ability to gather and sort data, the real benefit of going digital comes from some amazing new analytic tools made possible by state-of-the-art GIS mapping software. And herein lies the rub. As the technology for doing this research gets more and more sophisticated, my ability to train students in its use, without reducing my classroom to a technology workshop, diminishes year by year. It is no longer realistic to expect my

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students—English majors, by and large, with little or no background in spreadsheets or programming—to master, in a single semester, the programs and analytic techniques needed to explore the data properly. (I wouldn't get far myself without the assistance of Yasser Ayad, director of our GIS Lab and my key collaborator for many years now.) So instead, I wind up doing the analysis for them, graphing the results while Yasser generates the maps—presenting students with the fruit of their labors at the end of each semester.

Now, my classes have always had fun with this project. It's a good—and memorable—educational experience. But I feel that an essential part of the experience has gone missing in the process: the part where students take the information they have so carefully gathered, and try to make sense of it *on their own*, using their own intelligence and the knowledge gained from class to formulate theories and present their findings *themselves*.

This, then, is the broader issue I would like to raise here. The techniques of analysis in any discipline can be extremely intricate, and mastering requisite software only exacerbates the challenge. How can we coach students to a level of proficiency where meaningful research and discovery can take place—in general classes like mine, where the analytic "apparatus" is not itself relevant to our students' professional needs? 

You can visit the site and take the survey yourself at <http://web2.clarion.edu/english-luthin/dialect2003/>. To view some of the dialect maps developed from the survey, visit <http://jupiter.clarion.edu/~luthin/wpds/>.

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## A lab course experiment

~ Susan Prezzano (AGES)

**ARCHAEOLOGISTS ARE** used to working with undergraduates on collaborative research projects related to site excavations. Excavations require an enormous amount of effort, and by

tradition, most universities with an active archaeological field component use undergraduates who spend the summer participating in the demanding tasks required to uncover the past. Each summer, I teach the Clarion University archaeological field school, a course where I require students to complete research projects as well as learn basic excavation techniques. This experience provides students with a foundation for later employment as archaeologists and also produces important discoveries.

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This course was immensely satisfying because it underscored what I learned from teaching the field school

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Although the field component of my student research program has been very successful, incorporating students into the subsequent steps of processing and analyzing field data has proven difficult. Time constraints during the regular academic year severely limit opportunities to provide the intensive training undergraduates need in order to analyze archaeological data.


As a solution, I transformed my Spring 2008 *Laboratory Methods in Archaeology* course by requiring students to write collaborative reports on sites selected from the university collections. Students worked in groups using the WIKI component of Blackboard. WIKIs allowed students to work online on a common document. Students analyzed ceramic and stone artifacts, located photographs and news articles, and developed a history of excavations. Students then created an online web document that included the background material, analyses, and

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Not only is undergraduate research an amazing experience, it allows you to apply what you learn in the classroom to real life applications.

~Jordan Blair (Biology)

interpretations that are typically included in a site report. Each group formatted its site report in its own way, but each report included spreadsheets, maps, photos, text, and hyperlinks. The WIKI permitted me to make suggestions during the creation process of the site reports, and to assess what each student contributed to the project. During the final week of the course, each group presented its site report to the other members of class.

It was gratifying to watch students get excited over interpretations of the data. My students produced very creative interpretations of the artifacts and other site materials, and we made inroads into the recovery of data from sites excavated over 40 years ago. Several students became proficient enough to work on more recently excavated sites as independent study projects. The outcome of this course was immensely satisfying because it underscored what I learned from teaching the field school: student/faculty research can be effective teaching. 

Those who are interested in viewing the student site reports can contact Susan Prezzano at [sprezzano@clarion.edu](mailto:sprezzano@clarion.edu).

I have found that nothing can compare to the feeling of discovery.

~Andrew Thompson (Biology)

## Animal Physiology Symposium

-Valerie A. Bennett (Biology)

**ALTHOUGH CLASS LECTURES** in BIOL 451/551 focus on teaching students more “traditional,” but necessary, content and concepts in Animal Physiology, a set of parallel assignments challenge students to think like and BE scientists, apply their knowledge base, and strive to extend it through research. Students have an opportunity in this course to go through all of the necessary steps of scientific research to do their own independent or small group collaborative project.

We begin the semester by talking about communication of information – where do all of those facts in textbooks or on the web come from? We consider the validity of different sources of information, from the “science news” on TV or online, to textbooks and secondary reviews, and finally primary research. Students are taught how to do literature searches using library resources- selecting appropriate keywords, focusing a topic, and discriminating between different information sources. They write a primary literature review of current research on a specific topic in Animal Physiology. Graduate students are required to go the extra mile by expanding their literature review into a “grant proposal.” including a hypothesis, experimental design, list of materials and tentative budget.


This process culminates when the students *become* the researchers, designing and conducting their own experiments either individually or with a partner. They are responsible for planning and performing an experiment, collecting and analyzing data, interpreting and presenting their results as part of our annual Animal Physiology Symposium. Students must submit for pre-approval their hypothesis, experimental design, expected results, and equipment and materials list. They are given 2-3 weeks of lab time to conduct their experiments. Many students use equipment and techniques learned in earlier labs to explore and answer new questions, while others have done projects extending from student/faculty research projects they were already involved in.

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The students *become* the researchers, designing and conducting their own experiments

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The last week of class and lab time is dedicated to the annual Animal Physiology Symposium. Students use PowerPoint to present their projects in

the same format as at a professional scientific conference: 15-20 minute presentation with 5-10 minutes for questions and answers. I develop a program, provide refreshments, and invite other faculty and students to join the audience. When not presenting, students also become “peer reviewers”, evaluating each project and presentation. For many students, this process teaches valuable lessons about the challenges of research: time management, careful planning, accuracy and reliability (as well as human error) in data collection, but especially the lesson that experiments do not always work out as planned. If students come away with one of these lessons, regardless of how well their experiment “worked,” then I consider the project a success! 

### 5th annual Animal Physiology Symposium

Mon & Wed December 1 & 3, 8-8:50am (249 Peirce), and Thurs, December 4, 2-5pm (161 Peirce)

All are invited. Refreshments will be provided.

## The student perspective

~ Daniel Vikartosky,  
Lisa Baumgartner, Luke Martin,  
Kenn Staub (CSD)

**AT THE UNDERGRADUATE** level it’s often convenient, if not inviting, to view students almost exclusively as consumers of knowledge. Considering that they have yet to fully master the content in their fields of study, this is not an entirely invalid assumption. Just as valid, however, is to view undergraduates as having the potential to be producers of knowledge. By engaging in a collaborative research relationship with a faculty member, students have the opportunity to integrate and apply course content for the active generation of new information.

Though all collaborative research endeavors are valuable because they involve students in active, extracurricular learning, some investigations exceed expectations and

earn outside recognition. Lisa Baumgartner and Daniel Vikartosky, two former undergraduates in the Communication Sciences and Disorders (CSD) program, had collaborative efforts accepted for presentation at state and national conferences. Luke Martin, a senior in CSD, has recently undertaken a project for which he and his faculty collaborator (myself) hold high expectations. Having weathered the process with some degree of success, the four of us thought it might be useful to consider faculty collaboration from the students' perspective.

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“I also learned the process of research never ends.”

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Without exception all participants entered into the collaborative relationship with one objective, to further the CSD program's in-class educational opportunities by engaging in a “hands on,” extracurricular learning experience. Ms. Baumgartner undertook her project to “gain valuable experience and knowledge in the field of research and speech pathology.” Mr. Vikartosky echoed this sentiment, reporting “I learned a great deal about the field of speech pathology as well as the research process.”

Particularly appealing to the students was the opportunity to develop and participate in a mentoring relationship with a faculty member. Ms. Baumgartner found “the give and take relationship of guidance and help from an experienced faculty member combined with the responsibility given to the student to bring their thoughts and ideas to the table” to be a particularly valuable component of the experience. Mr. Martin further elaborated: “As a student, when working one-on-one with a faculty member you have so much knowledge readily accessible to you. Sure you have mass amounts of information

available to you on the internet, but I think what most students miss is the fact that your professor has the exact knowledge you want and he has it without turning on your modem.” Even in the information age, the personal touch and human interactions trump a professional knowledge-base readily available for download through a fiberoptic cable.

Though the opportunity to generate new knowledge might have stimulated the student/faculty collaboration, it was not the only product ultimately realized. Mr. Vikartosky “soon realized there was more to doing research than simply looking up information and compiling data. To me, research became an enormously dynamic process that required constant communication, networking, traveling, time management skills, and creativity to overcome obstacles and maintain reliable records.” Without a doubt, all participants experienced the intense interactions and differences of opinion that sometimes unfold as a collaborative project ebbs and flows. Despite this, all view the collaboration in a positive light that fostered a desire to continue engaging in the research process. Mr. Vikartosky noted, “I also learned the process of research never ends. One question constantly led to another and new studies were always being proposed. If I were to change anything about my undergraduate research experiences I would simply have started doing research earlier.”



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## Who's it for?

~JEANNE M. SLATTERY (PSYCHOLOGY)

**THIS SEMESTER**, in my *Interviewing Skills and Casework* class, we have been learning how to listen to, write about, and intervene with people. This isn't exactly the place where one would

expect to find student/faculty research; nonetheless, research has been an integral part of our experience.

We have spent a considerable part of this semester trying to understand Andrea Yates, a very religious woman who drowned her five young children in 2001. My class did research on her –

there are news articles, court documents, videos, and psychiatric reports available on the web – to pull together a comprehensive psychosocial history. Then they gathered research from professional databases and are beginning to identify a research-based treatment plan.

This process has been exciting for them, with lively discussion energizing our class time. Because the research has been active and “real,” they have been more invested in the research process than they might otherwise be.

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This is a win/win proposition.

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It has also been exciting for me. I am writing a book with a colleague at University of Connecticut and using drafts of our chapters in class. My students' mistakes, discoveries, and excitement are making this a stronger book, helping me think about how to present ideas better, and teaching me how to be a better clinician.

Who is student/faculty research for? Active learning is an excellent way of getting students involved in course material. It also forces me to stay on my toes and think more carefully about the material. This is a win/win proposition.

Guest Editor: Susan Prezzano  
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The opinions expressed in these articles reflect those of the authors themselves and may or may not reflect the views of the *HiH* editorial staff or those of Clarion University as a whole