

## **SAGES Pilot Senior Capstone Guidelines**

### **February 2004**

#### **Background and Rationale**

The Seminar Approach to General Education and Scholarship (SAGES) culminates in a Capstone Experience in which students, integrate, practice and demonstrate the skills they developed and honed through the SAGES curriculum and their major/minor studies at Case. The experiences may take different forms, but all will include active participation that propels students to practice analytical and practical skills already learned and apply them to a specific research or creative project and then publicly present this project. In this way, their education moves beyond the classroom environment and begins to replicate the environment of the “world of work,” thus engaging the student in different forms of analysis and articulation than the classroom, and giving them an understanding of and a sense of accomplishment through participation in their own research or creative initiative.

In his book *Educating the Reflective Practitioner*, author Donald Schön presents a history of experiential practice within the academy, and a strong case for including “reflection-in-action” within academic curricular structure to enable the student to bridge the gap between the world of academia and the world of work. He quotes Herbert Simon’s book, *Administrative Behavior* in saying that experiential practice and academic theory must to be integrated, or the practice side of learning becomes dependant on the professional world for all its input, thereby becoming a teacher of current practice, rather than an innovator of practice.<sup>1</sup> Schön goes on to advocate for experiential learning models such as apprenticeships, co-ops, and practicum to engage the student in the integration of theory and practice.<sup>2</sup>

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<sup>1</sup> Simon, Herbert. *Administrative Behavior* (2<sup>nd</sup> Ed). New York: Macmillan, 1969. 350.

<sup>2</sup> Schön, Donald A. *Educating the Reflective Practitioner*. San Francisco: Jossey-Bass Publishers. 1990

In his book, *The Unschooled Mind*, Howard Gardner makes a similar case for the role of experiential apprenticeship in education. He argues that apprenticeships

...permit aspiring youngsters to work directly alongside accomplished professionals, hence establishing personal bonds as well as a sense of progress toward an end...apprenticeships often are highly motivating... young people enter into the excitement of constructing a highly complex undertaking where the stakes are often high...<sup>3</sup>

Gardner goes on to make a case for experiential learning as an integration of learning development.

The kinds of environments called apprenticeships have for millennia fused the available forms of knowing in a rich and contextualized way.... In a literate society, it has become essential to create learning situations in which ...earlier forms of knowing come to be utilized in conjunction with the formal ways of knowing that grow out of, and are tied to, specific disciplines.... A judicious introduction and integration of apprenticeship methods within a scholastic setting should yield students whose potential for understanding is engaged and enhanced.<sup>4</sup>

The “capstone project” is one method to engage students in the integration of learning theory and research/creative interests. It is the view of the capstone committee that the best format for this project includes all aspects of the SAGES curriculum:

- Students create and implement their own learning plan
- Students engage in planning and discussion with an advisor in the department within which the project is implemented
- Students are given the opportunity to include a mentor that advises on the specific focus of the project
- Students are given the opportunity for cross-disciplinary learning
- Students are given the opportunity to research with Case professors or work with Community Partners
- Students evaluate and analyze their learning process and project outcome through written documentation and reporting
- Students engage their communication skills and share their research/creative work with the community at large

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<sup>3</sup> Gardner, Howard. *The Unschooled Mind, How Children Think and How Schools Should Teach*. New York: Basic Books. 1991. 124.

<sup>4</sup> Ibid. 181

## **Existing programs at Case and elsewhere**

Case already has many Senior Project experiences that are thriving in departments and schools. Roughly 60% of Case graduates participate in an experience akin to a Senior Capstone. The Schools of Engineering and Nursing require senior projects of all undergraduates. Within the College of Arts and Sciences, senior projects of some form are required within English, Geology, History, Physics, Political Science, Religion, and the College Scholars Program. In the Weatherhead School of Management, Economics require capstones of undergraduates. These requirements range from hands-on research and written theses to required seminar classes. Many other departments also allow students with sufficient GPA's to participate in Senior Honors Projects. Most of these projects, with the addition of a public presentation of the endeavor, if not already required, should satisfy the Capstone Requirement.

Many other institutions require a capstone or integrative experience. US News and World Report (2003) notes: "Whether they are called a senior capstone or by some other name, these culminating experiences ask students nearing the end of their college years to create a project of some sort that integrates and synthesizes what they have learned. The project might be a thesis, a performance, or an exhibit of artwork." The magazine specifically identified schools known for their programs:

College of Wooster (OH)  
Princeton University (NJ)  
Harvard University (MA)  
Carleton College (MN)  
Reed College (OR)  
Swarthmore College (PA)

At the College of Wooster, Independent study (IS) is the signature academic program in which every graduate completes three semesters of research in his or her major. Through

IS every student works one-on-one with a faculty mentor to produce a piece of original research. Specific formats and procedures vary from department to department. In the junior year, students spend one semester preparing for the year-long exploration of senior IS which comprises one-quarter of the course work in the final year. Seniors select their own topics and, through weekly meetings with the faculty advisor, develop a research regimen that they follow during the first semester and through the spring break of the second semester. The final IS projects are due following spring break. Seniors defend their theses during oral presentations to members of their departments

At Princeton the thesis, an independent work that typically runs 100 pages, gives seniors the opportunity to pursue original research and scholarship on a topic of their own choice under the guidance of faculty advisors.

At Harvard University the thesis is designed to be a six month project which the students are expected to begin at the start of their senior year. Students are encouraged to formulate ideas independently and contact faculty members as potential advisors to help them develop the project. Appropriate thesis topics should address basic research problems and permit the student to develop skills in critical analysis. Oral exams on the thesis are typically required.

At Carleton College, the College requires that each major include a capstone experience (called The Senior Integrative Exercise). It is the prerogative of the individual departments and programs that offer majors to determine how many credits to award in connection with its senior capstone experience.

## **SAGES Capstone Guidelines** **Pilot Program for students entering in the fall of 2002, 2003 or 2004**

### **Overview**

A Capstone experience integrates and synthesizes what a student has learned. It can be an individual or group project (research or creative endeavor) taken independently or as part of a course. A public presentation of the project is required.

In an ideal capstone experience, the student begins discussions with faculty regarding ideas for their senior capstone as early as their first year at Case, but no later than the end of their second year. By the end of their second year at Case, the student would identify a preliminary topic for their capstone and approach the department within which the capstone would be articulated, and request a capstone advisor. This capstone advisor's responsibility is to oversee the planning and execution of the capstone project, serve as the departmental liaison for the project, and to take responsibility for reporting the completion of the capstone. This advisor might also help the student to identify a mentor for the project, if the student wishes to include a mentor. The mentor may play a role that includes partnering with community agencies, giving the student guidance regarding the world outside of academia, or advising the student on different specifics of the creation and outcome of the project. The advisor's role is primarily academic, and the mentor's role ideally reaches beyond the circumference of the major department or the university.

In the third year, the student meets with their advisor and mentor when appropriate, planning for and possibly initiating their capstone experience. In their fourth year, advised by the departmental advisor and the mentor when appropriate, the student would implement the plan for the capstone. By the end of their fourth year, the student analyzes the project and evaluates their participation in a written format, and shares their research/creative activity with the public through a presentation, be it the presentation of a creative work or a poster

session at the Senior Capstone fair, a public lecture, a presentation of a paper at a conference, or publishing an article.

### **Timetable for the SAGES Senior Capstone**

Each SAGES student will create their own capstone project, based on the following:

#### **In the first and second years:**

- The student meets with his/her SAGES first-year advisor, major advisor, and faculty in the department(s) of potential major(s) to discuss majors, possible Capstone project ideas, and curricular choices to fulfill requirements and enhance the student's learning plan.
- Student's planning on participating in junior year abroad and/or co-op programs need to begin planning their capstones before they leave campus.

#### **During the third year:**

- The student is assigned a departmental capstone advisor and finds a mentor when appropriate.
- The student, with counsel from his/her advisor and mentor when appropriate, creates a capstone proposal to be turned in to the capstone advisor and the corresponding department for approval. (Specific guidelines for what information must be included in the proposal will be available from the SAGES office soon.) In general, the capstone proposal should include a process of evaluation, written component(s), the type of public presentation for the project, and if applicable, a plan and budget for the public presentation.

#### **Important points to note:**

- The project does not have to originate in the student's major department.
- If a student plans to use a capstone project required by a major to satisfy the SAGES Capstone Experience, the student needs to ensure that their project satisfies the requirements of both programs - the major and SAGES.
- The advisor is from the department of the capstone origin, but does not necessarily have to be from student's major department. The advisor must be a member of the regular faculty.
- A capstone can be performed outside of undergraduate degree granting departments or schools (e.g. professional schools or institutions outside of the Case community). In those cases the student should identify a mentor where the capstone is to be performed and an advisor in department where the capstone originates who will assure that the educational goals are achieved and assign the official grade in consultation with the mentor.

- The mentor can be from another department or outside the university, and can be a professor, a graduate student, university staff, a Presidential Fellow or a community partner.
- Departments may choose to require a capstone preparation course in the third year, but it will be a departmental, rather than a SAGES requirement
- Interdisciplinary projects are encouraged, but must conform to the guidelines created by the department of capstone origin.
- Capstone projects may be team efforts, but they must have well-defined roles for each team member.

### **In the summer before the student's Final Year:**

- The student may wish to participate in research, independent study, internship, coursework, or partnership to prepare for project (Note: summer work is optional not required)

### **In the Final Year**

- The student must earn at least 3 credit hours during the final year within the department of capstone origin for research and preparation of the project. (Note: these credits may be earned during the summer preceding the final year.)
  - Credit may be issued for a class created for capstone preparation, as an independent study, or as a designated capstone course
  - At the end of the semester, the student must document the research or creative process completed during the semester for a grade
- By the last day of classes during the spring (final) semester of the final year (before graduating), the student must complete the project for a grade. Completion of the project includes:
  - A public presentation (could be at the Senior Capstone fair, a conference, a performance, a public lecture, a teaching presentation, or other, as approved by the department of capstone origin)
  - A written component (could be a research paper, creative writing, a written evaluation of creative process for a performance, or other as approved by department of capstone origin)

### **Completion of Project with a passing grade is necessary for graduation from CWRU**

### Examples of potential capstone experiences

A hypothetical student in the department of **Theater and Dance** might choose the following learning plan:

**First Year:** Through the SAGES and departmental curriculum, and with the help of the SAGES and departmental advisors, identify areas of interest for future study

**Second Year:** By the end of the second year, identify the department of origin for their capstone project, and identify a departmental advisor. Begin planning ideas for potential projects

**Third Year:** Junior Year abroad studying theater in England. A project proposal is submitted to the department of capstone origin.

**Summer before Senior Year:** Identify Mentor; begin concrete planning for senior capstone

**Fourth Year:**

**First Semester:** Mentor is a community partner with the Cleveland Play House. Student's project is the direction of a new American Play. Student meets with departmental advisor and mentor as they plan the execution of a presentation of the play

**Second Semester:** Student auditions and casts the play, and with the help of the advisor and mentor, works with the playwright and directs the play for a public presentation in the Eldred Theater Black Box at the end of the semester, to coincide with the Senior Showcase. Student keeps a journal of the progress of the rehearsals, identifying and evaluating the learning process.

**At the end of the Semester:** Student uses the rehearsal journal to submit a written evaluation of the project to the Department of capstone origin. Performances of the project are open to the public.

A hypothetical student in the Department of **Biology** might choose the following learning plan:

**First Year:** Through the SAGES and the departmental curriculum and with help of the SAGES and departmental advisors, the student will identify areas of interest for future study.

**Second Year:** By the end of the second year the student should have identified the department of origin for their capstone project, and identified a potential mentor. In many cases the student will choose a mentor for the research

project, which may for instance be in the School of Medicine. In these cases, if the student is a Biology major, s/he will also have to identify a Biology faculty member who will be an “in house advisor” for the Capstone project. The Biology faculty member will monitor the progress of the student throughout the Capstone project by periodic meetings and review of the final reports on the project.

**Third Year:** During the Spring Semester the student should enroll in Biology 389 Selected Topics (3 cr.). This course will be similar to PSCL 375 Research Design and Analysis where the student will develop a research proposal for the Capstone project with input from the prospective mentor.

**Fourth Year:** The student will enroll in Biol 388(3 cr.) in the Fall and in Biol 390 (3 cr.) in the Spring. These are both independent study courses. The student will execute their Capstone project and will be expected to write a progress report at the end of Biol 388. The student will present their final project in a poster format at the Senior Capstone Fair. Qualifying seniors (3.2 GPA - University, 3.5 GPA - Major) will also be expected to defend an honors thesis an oral examination.

A student in **Psychology** might execute the following plan:

**First Year:** The student will take a variety of courses and identify interests for future study and for a major concentration

**Second Year:** By the end of the second year, the student has decided on a major and may have identified a major advisor and a possible Capstone mentor.

**Third Year:** During the Spring semester, the student will have decided on a major advisor and a Capstone mentor when appropriate. The student should enroll in PSCL 375, Research Design and Analysis, where the student may write a research proposal for the Capstone project, a proposal agreeable to the Capstone advisor.

**Fourth Year:** The student will pursue the Capstone project by registering for PSCL 397 (Independent Study) in the fall and PSCL 395 (Honors Research) in the spring. The student will be expected to present the results of their Capstone project in the spring at an appropriate open forum, e.g. the Senior Capstone Fair, a departmental colloquium, or acceptance of the project for presentation at a scientific meeting or undergraduate research conference.