As I will explain, our capstone experiences are similar to what you would expect them to be. What may be most interesting to you is the systematic approach we use to prepare students to reap the full benefit of the capstone experience -- a systematic approach I’ll explain after first describing our Capstones.

So about our capstones --

- First, it is important to say that a capstone is required of all our students.
- Second, in the capstone we expect students to undertake an original project and to make written and oral presentations of the completed work.
- Third, the capstones take many forms reflecting the breadth of our comprehensive university with all the disciplines you would find at a liberal arts institution plus engineering, nursing, and business. Consequently we see capstones that are design projects, bench-top and field experiments, analyses of primary materials, and creative endeavors. We see projects done in groups and done individually. Individual projects are more common.
- Fourth, the capstones provide tangible evidence of what our students can master, and evidence of their skills and their promise. The capstones are a demonstration of the engagement and accomplishments that give prospective employers, graduate programs, and the student herself, the confidence that this college graduate not only has a diploma but also has the key skills to succeed.
- Finally, this culminating experience is a celebration of accomplishment. Parents, grandparents, siblings and friends along with faculty and fellow students attend the public presentations of capstones.

Now that I’ve explained what our capstones are like, let me explain how we prepare students for capstone and how we prepare students to make the most of the experience.

Frankly, there are many courses and experiences and many faculty that contribute to a student’s preparation for the Capstone. But at Case, we additionally systematize preparation for the capstone with SAGES.

SAGES is an acronym for the Seminar Approach to General Education and Scholarship – and it is the through-going strand of the general education requirements for all undergraduates at Case. SAGES consists of five courses – a first semester seminar, two more seminars by the end of the second year, a seminar in the major department during the junior year, and then the capstone. While each of these courses has its own aims, they are also designed to work together as an integrated set of learning experiences that progressively refine students’ core academic skills. These skills are to be able to actively engage in academic inquiry; to think critically and deliberate ethically to answer questions; to evaluate and apply information to answer questions and solve problems; to write persuasively; and to communicate clearly. This focus on skills ultimately builds student capabilities so that the capstone experience shines.
Now I will briefly explain how each of the courses in the sequence works and contributes to the success of capstones.

First Seminar is taken in a student’s first semester. This is not an extended orientation course. This is a small, writing-intensive, discussion-based course, driven by a question or problem that engages students in a co-investigation with their professor and with one another. With 70 or so topics in the humanities, social sciences, natural sciences and technology fields to choose among, students are able to find something of interest. The focus is on critical reading and thinking, on discussing ideas with students and colleagues, on information literacy, and persuasive writing.

One feature of First Seminar is that the seminar leader is also the student’s advisor, ensuring that students begin their CWRU experience with a faculty member that they get to know and feel comfortable seeking advice from. Another feature of First Seminar is additional time set aside in the weekly schedule for seminar leaders to – among other things - introduce students to the intellectual and cultural treasures near Case – world-class museums, an orchestra, the rock n roll hall of fame. This extends the scope of students’ inquiry beyond the classroom walls.

After First Seminar, students take two University Seminars. Again these are small, writing-intensive, discussion-based classes. These University Seminars build on the skills emphasized in First Seminar, but explore topics at a more sophisticated level. There are more extended arguments in writing and more advanced analysis and contextualization in discussion. More questions are asked and their implications are more broadly considered. Students usually make formal oral presentations in these seminars. To support the oral presentations we authored a primer; a primer now published by Oxford University Press. The University Seminars differ in topic areas from First Seminars. While each class has a unique name, First and University Seminars are categorized by disciplinary domains – Thinking about the Natural and Technological World, Thinking about the Social World, and Thinking about the Symbolic World. Students must take seminars in these different categories, thus as part of SAGES, students explore how different disciplines ask and answer questions. The two University Seminars are to be taken by the end of sophomore year.

The Departmental Seminar – which is usually taken in the junior year - marries the seminar approach to the students’ developing disciplinary knowledge in their major. Again these classes are small and discussion-based, but now, students learn the modes of disciplinary discourse – how to write and speak in the conventions of the major discipline. These courses typically cover research methods and for instance students may write a research proposal. An exploration of professional ethics is often integral to these course discussions.

Finally we arrive at the Capstone in which seniors apply and refine the skills they have been mastering. They define a problem or frame a question, develop a response, and communicate their findings through a written thesis and a public presentation.

To summarize, SAGES is an intentional sequence of courses featuring repeated cycles of instruction and practice that progressively refines the key skills needed for maximally effective capstones. As I enumerated earlier, these skills we expect students to have honed are:

engaging in academic inquiry actively;
thinking critically and deliberating on ethical implications;
evaluating and applying information in answering questions or solving problems;
writing persuasively; and
communicating clearly.

In terms of the skill of actively engaging in academic inquiry, our students grow from participating in faculty-mediated explorations of a topic in First Seminar and University Seminars, to participating in disciplinary conversations in departmental seminars, to ultimately leading their own academic inquiry in their capstone.

In terms of the skill for thinking critically and deliberating on ethical implications, our students are challenged in First Seminar to consider the differences in assumptions and values of the authors of the papers they read. In University Seminars they respond to these differences and consider the ethical implications of different responses to posed questions. In departmental seminars, students are typically introduced to the professional ethics of the major discipline. In capstones, we expect students to be able to articulate the implications, ethical and otherwise, of their findings.

In terms of evaluating and applying information to answer questions and solve problems, students start with the assigned readings of First Seminar, grow to independently find additional scholarly works to strengthen their arguments in papers for University Seminars, and finally students generate new information in their capstone.

In terms of writing persuasively, shorter persuasive papers in First Seminar become extended arguments in University Seminars. Then students adopt disciplinary conventions in writing for Department Seminars, and finally showcase the capstone with their written thesis.

In terms of communicating clearly, the conversations in the midst of seminar discussions become more formal and attuned to different audiences in University Seminars, department seminar, and then the Capstone.

While I have emphasized how we have structured SAGES to progressively grow expertise in these skills, I do want to acknowledge that there is almost certainly some value in the mere repetition of courses that focus on these skills. In SAGES, students are in small seminars focused on refining skills in three of their first four semesters at the university and then in another small seminar in their junior year. There is relatively little time between seminars for the skills to atrophy from lack of use.

Does our approach work? Pedagogically it makes sense that it should – to get good at things you need lots of practice and instruction. What is the joke …..How do you get to Carnegie Hall? Practice, practice, and more practice. While not all the capstones are yet Carnegie worthy, you get the idea.

Our approach is consistent with the university’s mission and means that when we graduate a student they have demonstrated their ability to actively engage in asking and answering important questions.
Importantly we have fulfilled the promise we made upon students admission to the University. We have invested the effort to prepare students for these experiences. While the path we have taken with SAGES is faculty intensive and therefore expensive, the students deserve no less.

Our approach is structured and thus lends itself to evaluation. The widely held opinion of the faculty is that with SAGES:

- Our students are stronger writers and the capstones reports are better written
- Oral presentations are stronger
- Discussions in non-SAGES courses are now stronger and more effective

Finally, we are in year ten of the full implementation of SAGES for all students. The persistence of this program probably means something.

Does the SAGES approach work for all our students?

All students must do a capstone to graduate so in a way we can say it works for all students.

More importantly, making a capstone part of the requirements for a degree means that such powerful experiences are for everyone, not just a subset of our students - the honors subset of students or the subset of students who already know how volunteer to work with faculty, have the resources to begin as a volunteer, and don’t already have a work study or other job to pay for school.

The preparation and focus on skills means that all students admitted should through our efforts be equipped for undertaking and succeeding with their capstones.

So yes, I think SAGES works for all our students. But I hope we continue to reflect on our curriculum and see if we can come up with yet more effective ways to improve the student experience and the capstone.