Executive Summary

The School of Arts and Sciences’ 2022–2023 assessment record demonstrates a commitment, across the School’s forty-five departments and programs, to teaching and learning; to continuous, evidence-based improvement; and, ultimately, to student success.

This year’s reports describe a diverse range of authentic assessment efforts that are responsive to the specific challenges, opportunities, and goals of individual SAS departments. In what follows, we have made a particular effort to highlight examples of impactful assessment efforts that departments are using to evaluate and guide curricular changes and pedagogical innovations.

Four themes emerged from this year’s reports:

Assessments of the impact of major course or curricular changes. A number of departments examined the impact of course redesigns or other curricular changes intended to improve student learning. The results from these assessments were generally positive, and the departments are working on further improvements and refinements based on this year’s assessment results.

Improving coordination within a curriculum. Several departments are working on efforts to improve coordination between different portions of their curricula, often between introductory and upper-level courses. These efforts involve aligning learning goals and expectations at different points in a program, which then inform curricular revisions (e.g., adjustments to topics taught in introductory courses, or the adoption of strategies for activating and integrating prior knowledge in advanced courses). We regard the communication, coordination, and pedagogical resourcefulness displayed by these departments as a model for integrated assessment efforts in SAS.

Growing nuance in assessment of course delivery methods and formats. Several departments, including many language departments, examined student learning in online, in-person, and hybrid courses. These analyses often go beyond simply comparing different modalities, aiming instead to identify specific ways in which student learning varies in different delivery modes and different languages. (E.g., students in asynchronous online language acquisition courses often perform better on reading and writing assessments than their in-person counterparts.)

Analysis of course sequences in highly sequenced STEM disciplines. Several departments with highly sequenced curricula identified differences in student learning between “on-sequence” enrollment patterns (e.g., taking General Biology I in Fall and General Biology II in Spring) and “off-sequence” alternatives (e.g., taking General Biology I in Spring and General Biology II in the following Fall, or other more complex enrollment patterns). Often, students in off-sequence courses demonstrate somewhat lower levels of learning on average than students in on-sequence courses. Understanding and addressing this complex and multifaceted issue could have significant impacts on time to degree and the academic and career success of at-risk students.
Introduction

The critical undergraduate education mission of the School of Arts and Sciences is to achieve excellence, create opportunity, and build leadership by providing a high-quality, nationally recognized arts and sciences education to a highly diverse student population.\(^1\) In addition to the Core Curriculum goals,\(^2\) our students will achieve rigorous disciplinary learning goals in major and minor fields of study (or a single credit-intensive major field of study).

Since 2018, SAS has utilized an inquiry-oriented framework for program assessment. This approach asks departments to identify a question about student learning that they will investigate through the assessment process, explain their methods for investigating that question, and describe their results. Departments are also asked to explicitly connect their assessment process to the ultimate goal of improving student learning, and to explain how they disseminate, analyze, and act on the results they obtain through the assessment.\(^3\)

This process is designed to engage faculty in authentic, meaningful assessment practices by: (1) focusing on the use of assessment results; and (2) providing departments with the flexibility to focus their assessment efforts on areas that they judge to be most important for their programs.\(^4\)

In the SAS Office of Undergraduate Education, the Director of Teaching, Learning, and Assessment and the Senior Associate Dean of Undergraduate Education provide consultations, workshops, resources, and support in accessing institutional data to help departments design and carry out their assessment inquiries.

In February 2023, representatives of 21 SAS departments attended a program assessment workshop in which SAS OUE discussed the basics of assessment and curriculum design and presented examples of assessment excellence in SAS.

In May 2023, the Assessment Council on Learning Outcomes (ACLO) distributed a revised set

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2. The Core Curriculum is addressed in a separate annual assessment report submitted to the Assessment Council on Learning Outcomes, the Core Requirements Committee, and the Executive Dean of SAS.
of questions for schools to address in their program assessment reporting. The report below responds to the ACLO’s questions, drawing from the department-level, inquiry-oriented assessment reports submitted by SAS departments; it also provides some additional detail and analysis of assessment efforts and findings within SAS. The reporting form used within SAS is attached to this report as Appendix A.

2022-23 Results

Assessment Council on Learning Outcomes Questions

Changes to Plans, Leadership, or Processes

Describe any changes made in the past year to the school-wide learning outcome assessment plan or its leadership, and any changes in the program or department-wide learning outcome assessment processes. Explain why these changes were made.

As in past years, assessment processes within the School of Arts and Sciences are led by the SAS Assessment Committee working with the SAS Director of Teaching, Learning, and Assessment and the Senior Associate Dean for Undergraduate Education. The inquiry-oriented approach to assessment in SAS, first implemented in 2018, continues to provide a flexible process that encourages individual departments to engage with and use the assessment process to make improvements to undergraduate education.

This year, in response to the impact of the faculty strike on departmental workloads, the deadline for program assessment reports was pushed back from June 15 to July 14. Once submitted, reports were reviewed using the revised rubric that the Assessment Committee designed and piloted for the 2021-22 assessment cycle (Appendix B). The rubric conveys priorities and areas of concern within SAS's inquiry-oriented assessment process, aligns the review of program assessment reports with the structure of the SAS report template, and facilitates detailed and high-quality feedback for departments. The rubric was shared with all SAS departments as part of this year’s annual call for program assessment reports with the hope that sharing the rubric ahead of time would help departments understand what the Assessment Committee is looking for in the departments’ reports. For all department reports, the Director of Teaching, Learning, and Assessment and the Senior Associate Dean used this rubric to rate the departmental reports in six key areas:

- sustainability of the department’s assessment process;
- whether the department’s learning goals are clearly communicated and linked to the department’s courses and curricula;
- the potential for the department’s chosen question(s) to yield actionable information for improving student learning;
- the appropriateness of the methods used for investigating the department’s chosen question(s) (including the requirement that each department conduct direct assessment of student learning each year);
- whether the report includes sufficient detail about, and appropriate interpretation of, the department’s assessment findings; and
- whether the department is making reasonable plans to respond to their assessment findings.
The results of this rating process are presented and discussed below. Feedback to departments includes individual discursive reviews of each department’s report, prepared by the Director of Teaching, Learning, and Assessment and the Senior Associate Dean, accompanied by the completed pilot rubric. The SAS Assessment Committee also schedules midyear follow-ups with departments that appear to be stalled or in need of support in their assessment efforts.

**Changes to Learning Goals**

*Describe any changes made in school-wide learning goals in the past year, and why these changes were made. Please give examples if any program or department wide learning goals were changed, and the reasons for doing so.*

There were no changes made at the school level this year. At the program level, a handful of departments made changes. For instance, Linguistics adopted a learning goal that majors will be able to “communicate the findings and relevance of linguistic research to both an audience in the discipline and a lay audience” in order to convey to students and assess this important component of their program.

As noted under “Learning Goals and Curriculum” below, relatively few departments in SAS update their learning goals each year. In general, we do not expect a high rate of revision of learning goals in SAS, where many disciplinary contexts change slowly relative to the annual program assessment cycle.

**Methods**

*How do you directly assess student learning at the school level and the program level? Please give at least two examples with evidence from the assessments.*

*How do you indirectly assess student learning at the school level and the program level? Please give at least two examples with evidence from the assessments.*

SAS departments vary widely in size, curricular structure, and disciplinary and methodological norms. SAS’s inquiry-oriented approach to assessment maintains an expectation that all departments will engage in some form of direct assessment of student learning, while providing substantial flexibility in the methods used to directly assess student learning. This year, for instance, Comparative Literature conducted an in-depth qualitative analysis of student learning in the senior capstone seminar; Religion coordinated its program and Core Curriculum assessment to conduct an in-depth review of student writing skills in writing-intensive courses across its curriculum; and Genetics collected and analyzed quantitative student learning data from several key courses to comprehensively analyze student learning of all four of the program’s learning goals.

Indirect assessment efforts in SAS are similarly varied and responsive to departments’ circumstances and needs. Cell Biology and Neuroscience, for instance, surveyed graduating majors about their perceived preparedness for post-bac studies or careers, their feelings about the major, and whether they felt that the department’s fundamentals courses prepared them well for advanced courses, while Asian Languages and Cultures surveyed instructors, asking about their
perceptions of student motivation and their strategies for addressing DEI, accessibility, and belonging in their classrooms.

These direct and indirect assessment efforts are complemented by large-scale direct assessment of student learning in the Rutgers–New Brunswick Core Curriculum, which serves as the general education curriculum for SAS and several other New Brunswick schools. Those efforts are detailed in the separately submitted Core Curriculum Assessment Report.

**Findings**

*Please describe student performance in reaching desired learning outcomes during the past year. If applicable to your unit, please include licensing examination results. Please describe how any deficits will be addressed.*

The 39 reports received from SAS departments this year describe a wide variety of changes in student learning at the program level, and a similarly wide range of efforts to address these changes. Although it is impossible to summarize all of those changes here, two trends are particularly worth highlighting:

- Several STEM departments with highly sequenced curricula identified differences in student learning between “on-sequence” enrollment patterns (e.g., taking General Biology I in Fall and General Biology II in Spring) and “off-sequence” alternatives (e.g., taking General Biology I in Spring and General Biology II in Fall, or other more complex enrollment patterns). Generally, students in off-sequence courses demonstrate somewhat lower levels of learning, on average, than students in on-sequence courses. There are a number of potential explanations for this phenomenon, including students with lower levels of academic preparation tending to delay enrolling in, or take breaks between, sequenced courses; gaps in students’ engagement with the subject matter when they take a semester off; and the presence of students who are repeating a course in which they had previously earned a D or F.

- We are seeing growing sophistication and nuance in assessments of course delivery methods and formats. Several language departments, for instance, examined student learning in online, in-person, or hybrid sections of language acquisition courses, with one department finding that “Students in the AR section achieved a higher score in writing tasks and performed slightly better in tasks involving aural comprehension (listening)…Students in in-person sections performed slightly better in tasks involving speaking.” And a social sciences department compared student learning in three modalities of their methods course: a large, multi-section, in-person version supported by TAs and LAs; a smaller standalone in-person version; and an online asynchronous version. This department found worse outcomes in the online version—and, interestingly, found the best outcomes in the large TA- and LA-supported version. These analyses move beyond the reductive question *Is online as good as in-person?* to identify the specific factors and affordances that contribute to student success in different modes and formats.
Use of Findings

How will the results from your assessment be used to inform future teaching and curricular revisions?

Once again, reflecting the diversity of departmental contexts and assessment inquiries in SAS, the way that SAS departments use their assessment findings varies widely. The “Additional Detail on SAS Assessment Efforts and Findings” discussion on p. 13 below contains additional examples.

We noted in the previous section that several STEM departments described lower student learning in off-sequence offerings of courses, as compared to on-sequence offerings. Whatever factors contribute to that phenomenon, it is important to find a way to improve student learning in off-sequence courses. In that regard, Chemistry’s report (which examined the General Chemistry 1/General Chemistry 2/Organic Chemistry 1 course sequence) outlines a thoughtful multi-pronged plan for response:

Knowing which general chemistry 1 and 2 preparation historically leads to a higher probability to fail in CHM307, will allow us to identify these students already before the course starts and encourage them through e-mails to make use of the different resources that we offer and to make all efforts to attend lectures, recitations and office hours. … We will continue our discussion within the CCB department about developing an Extended Organic Chemistry 1 & 2 course sequence that will have a similar structure as Extended General Chemistry CHM165 and CHM166 (one additional lecture, one additional recitation, active learning methodology). Our analysis provides a model for identifying students that are likely underprepared for CHM307, even though each of them has the prerequisite, and for which this new course would be an excellent alternative. We reckon that many non-traditional students, who had to leave a gap between passing GC2 and taking Organic Chemistry, may appreciate the extra lecture and recitation as well as the active learning methodology, that allows them to work in groups on problems, something they may not be able to do outside the classroom. Also transfer students may appreciate the active learning model and the interaction with other students resulting from it, which allows them to be faster included into the Rutgers community and to make connections to other students.

We also noted in the previous section that a social sciences department found the best student outcomes in a large, TA- and LA-supported version of a methods course. They are already incorporating this into their curricular planning, and planning further follow-up assessment:

Several of our instructors have applied for and been granted funding to support Learning Assistants in their fall ‘23/spring ’24 courses. The evidence above suggests the LA program is likely to be very helpful. We plan to monitor these courses very closely in the coming year and to compare learning outcomes with earlier semesters by the same instructors but without LAs to see if we can measure the impact. If Learning Assistants are indeed a great benefit, we shall be seeking funding for more of them and teaching more faculty how to use them.
Availability of Syllabi and Learning Goals

Has the availability of syllabi, and learning goals on school and program or departmental web sites been maintained over the past year? If not, provide some explanation. Please provide a link to your syllabi and learning goals.

Yes. As in prior years, all SAS departments and programs have developed and published programmatic learning goals, and these learning goals are available on department web pages and in the official catalog. All department learning goals align with both University and Core learning goals and ensure that SAS students achieve rigorous disciplinary training in major and minor fields of study (or a single credit-intensive major field of study).

Additional Detail on SAS Assessment Efforts and Findings

Reports Received

38 of 44 departments or programs in SAS filed comprehensive assessment reports this year. Concerningly, a handful of SAS departments did not submit assessment reports this year, including one medium-sized department. As we have seen with students, national reporting has indicated that faculty, staff, and administrators across higher education are experiencing exhaustion and burnout. In this context, the SAS Assessment Committee is making particular efforts to convey to departments the importance of adopting sustainable assessment plans that produce useful information without overtaxing departmental resources or being overly reliant on a single individual. The Assessment Committee also scaffolds the reporting process for nonreporting departments, requesting that they file the first half of their 2023–24 reports in early 2024 to ensure that assessment efforts remain on track. The SAS Office of Undergraduate Education is also reaching out to these departments to offer extensive direct support to help get their assessment efforts back on track. Encouragingly, one nonreporting department has already filed a mid-year report outlining a thoughtful and achievable plan for assessment in the coming year.

Also encouragingly, in January 2023, the SAS Assessment Committee received mid-year reports from three departments that had been asked to submit mid-year assessment reports for 2022–23, including two large SAS departments. These mid-year reports described thoughtful planning for 2022–23 assessment efforts. Those departments’ final 2022–23 assessment reports were rated an average of 2.8 out of 3 across all categories (on the rubric scale described below), reflecting thoughtful engagement in high-quality, useful assessment efforts.

Sustainability of Assessment Process

Rating scale:
Best practices…3.0
Good progress…2.0

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Progress slow or stalled…1.0

<table>
<thead>
<tr>
<th>SAS Average</th>
<th>“Best practices” departments (score ≥2.5)</th>
<th>Best practices in sustainability:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.9</td>
<td>34/38</td>
<td>An appropriately sized assessment committee (given the size of the department or program) exists; similar assessment efforts can realistically be repeated in future years, even with changes in UGD or other important staff</td>
</tr>
</tbody>
</table>

**Summary:** The program assessment rubric piloted in 2021-22 and continued this year emphasizes the importance of sustainability in assessment processes. The small number of departments rating lower than best practices in this category received that rating because program assessment was solely dependent on the undergraduate director or a very small committee (except in very small departments, where such an arrangement is reasonable), or because program assessment efforts were exceptionally ambitious.

**Learning Goals and Curriculum**

Rating scale:
Best practices…3.0
Good progress…2.0
Progress slow or stalled…1.0

<table>
<thead>
<tr>
<th>SAS Average</th>
<th>“Best practices” departments (score ≥2.5)</th>
<th>Best Practices:</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0</td>
<td>38/38</td>
<td>Program learning goals are included in the department’s assessment report</td>
</tr>
<tr>
<td>2.8</td>
<td>32/38</td>
<td>Overwhelming majority of syllabi include learning goals</td>
</tr>
<tr>
<td>2.8</td>
<td>34/38</td>
<td>Clear mapping of learning goals (or levels of learning goal mastery) to courses or curricular requirements</td>
</tr>
<tr>
<td>2.7</td>
<td>2/3</td>
<td>(Optional) Learning goals were updated or revised; process for doing so is inclusive of department faculty, students, and other stakeholders as appropriate</td>
</tr>
</tbody>
</table>

**Summary:** As mentioned under “Availability of Syllabi and Learning Goals” above, all SAS departments and programs have developed and published programmatic learning goals, and these learning goals are available on department web pages and in the official catalog. A small number of departments do not include appropriate learning goal statements on the overwhelming majority of their syllabi. The SAS Assessment Committee is strongly encouraging these departments to take this simple step toward improving communication and transparency. The
vast majority of departments clearly map their learning goals (or levels of learning goal mastery) to courses or curricular requirements in their departments.

Relatively few departments in SAS update their learning goals each year. In general, we do not expect a high rate of revision of learning goals in SAS, where many disciplinary contexts change slowly relative to the annual program assessment cycle. However, we do encourage departments to view their learning goals as an integral part of their undergraduate curriculum and to include reflection on learning goals when they engage in other curricular development efforts. The SAS Office of Undergraduate Education also consults with and supports departments interested in revising or updating their learning goals.

**Assessment Question**

Rating scale:
Best practices…3.0
Good progress…2.0
Progress slow or stalled…1.0

<table>
<thead>
<tr>
<th>SAS Average</th>
<th>“Best practices” departments (score ≥2.5)</th>
<th>Best practices:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.9</td>
<td>36/38</td>
<td>Question being investigated is likely to yield information that could be used to improve student learning</td>
</tr>
</tbody>
</table>

**Summary:** SAS’s inquiry-oriented approach to program assessment asks departments to begin with a question about student learning that the department would find *useful* for improving student learning. The percentage of departments demonstrating best practices in this (or the equivalent) category has steadily increased over the past few years, from 70% in 2021-22, to 85% in 2022-23, to 95% this year. This improvement is due to a variety of efforts and circumstances in different departments; the SAS Office of Undergraduate Education continues to emphasize the importance of making assessment a useful process, and to support departments in developing assessment questions that respond to their specific concerns.

In reviewing department assessment reports this year, we noticed a number of departments engaged in assessment of significant curricular changes instituted in prior years. This is an approach to assessment that we strongly encourage.

For example, in Computer Science:

Over the last few years, the Department of Computer Science, DIMACS, and the Douglass Residential College, partnered to undertake an integrated initiative aimed at increasing the percentage of undergraduate women majoring and minoring in Computer Science. To that goal, a series of interventions were made to increase the participation of underrepresented groups in the Computer Science major. One of the interventions was the redesign of the introductory sequence courses Introduction to Computer Science...
(CS111) and Data Structures (CS112) to have a consistent look and feel to facilitate the transition into the next course in the sequence; to include clear weekly learning goals so that student are aware of the knowledge they are expected to acquire weekly, and modules that better connect to real-life issues to increase the sense of belonging in the field. The redesigned Introduction to Computer Science was deployed in Fall 2019 and the Data Structures course in Spring 2021.…

In Fall 2019, prior to Data Structures revisions, the DFW rate was 51% (69.7% of the women population failed the course). Table 1 indicates that this number is now between 25% and 30%. Women are succeeding at rates that are comparable to men’s success rates…Table 3 shows that underrepresented minorities are failing at higher rates than other populations.

Computer Science is planning additional curricular changes to the introductory course sequence to further improve student learning and lower DFW rates among all demographic groups. While we encourage departments to disaggregate student learning by specific course learning outcomes, we support the use of DFW rates in cases like this, as an appropriate way to assess a large-scale course redesign specifically intended to address high DFW rates and improve student persistence.

English assessed recent efforts to streamline an introductory course:

In Fall 2020, Rutgers English consolidated the two required courses in the major, one on prose (202) and one on poetry (201), into a single course. The new, combined 201 course now asks instructors to cover at least two different literary genres and two different historical periods to prepare students for the range of courses they will encounter in the English major. The course serves as an introduction to basic concepts and methods used in literary criticism. We therefore decided to look at whether students coming out of the revamped 201 course are achieving the department’s learning goal #2, which is to demonstrate the “ability to use critical and theoretical terms, concepts, and methods in relation to a variety of textual forms and other media.”…

This assessment generally validated the success of the curricular revision in question, while pointing to a need for increased emphasis on engagement with a variety of textual forms:

We found that, in all cases, the successful completion of 201 assignments required students to achieve learning goal #2 and that in nearly all the papers the students did in fact demonstrate the ability to use critical and theoretical terms, concepts and methods.…

The one aspect of learning goal #2 that was less uniform across the papers we examined was the students’ ability to apply literary terms and concepts “in relation to a variety of textual forms and other media.” We observed that the majority of student papers analyzed novels and short stories of the 20th and 21st century, and we reasoned that this was in part because many of the syllabi of the revised 201 are weighted heavily toward prose fiction and more recent historical periods. Since one of the aims of 201 is to expose students to multiple literary genres/forms and learning goal #2 explicitly refers to a “variety of textual forms” as a desired outcome, we concluded that the limited range of forms/genres
and narrow temporal scope of 201 course was the main area to address in future iterations of the course. Specifically, we felt that encouraging faculty to incorporate poetry and drama into more sections of 201 would bolster the student experience of the course and better prepare students for the English major.

Physics assessed ongoing efforts to improve the Analytical Physics course sequence, including an innovative exam coordination and grade replacement strategy designed to motivate students to keep working to improve their understanding of challenging topics:

Over the last few years, the format in the first 2 semesters, 750:123 and 124, of the 4-semester Analytical Physics sequence, has evolved to a more structured format that includes pre-lecture videos, expectations for every day of the week, and several forms of assessments every week, as well as 2 midterm and 1 final exams. This course is taken by about 700 first-year students predominantly in SOE and most students are taking Calculus 640:151 concurrently, at least by the second semester.…

New to the 2022-23 AY was the coordination of midterm and final exams such that questions were repeated (e.g., question 1 on exam 1 and question 1 on final were similar). Q1-11 on the final covered the same material as midterm exam 1; Q12-22 the same as midterm exam 2; Q23-35 were on the last third of the course. If students did better (percentage wise) on the final exam questions associated with a given midterm as compared to that corresponding midterm exam, the score on the earlier exam was replaced by the percentage earned in the associated portion of the final exam. The hope was that this would encourage students to review their mistakes and improve their mastery. The lecturer also provided additional worked examples, practice exams, and guided videos that emphasized the key points.

This revision appears impactful:

The percentage of students who mastered physics concepts in Spring 2023, measured by the percentage of students getting an A or B, significantly improved compared to Fall 2022….It should be noted that there was also a significant difference in the background of the first-year SOE students in Fall 2022 compared to previous years. For Fall 2022 not only was the yield about 25% higher for first-year SOE, an anomalously large number of students did not place into Calc 1 (even 640:135), suggesting a weaker background which could reflect remote high school instruction in 2020-21. Therefore, the data suggest that the interventions indeed have encouraged students to use the tools in this course to help them master the challenging physics concepts in Analytical Physics I.

The department also reviewed student feedback from SIRS, which indicates that the coordination of midterm and final exam questions (and the overall approach to assessment in these courses) is motivating for students. For example:

the grade replacement I think helps me go over my past mistakes more carefully

The grade replacement aspect of this class is so helpful. I'm no longer as stressed about my grades and more focused on actually learning the material effectively…. 
What I like best about this course is the fact that what we learn in lecture, recitation, and through online assignments is EXACTLY what we are assessed on in the exams. The exams aren’t necessarily especially easy, but this is a class where if you do all of your work and understand the concepts in class and on homework assignments, you can pretty much guarantee that you will do well on the exams and in the course as a whole.

The department plans to monitor grade replacement data to identify areas where students have particular difficulty; they also plan to implement the course structure developed for these courses in the third semester of Analytical Physics.

These reports document successful curricular revisions, but the departments in question are not resting on their laurels. They are planning to make further tweaks or revisions to address gaps in student learning, to use what they’ve learned to improve instruction further, and to expand successful strategies to other courses. The departments’ assessment processes, and their plans to actively use assessment results, illustrate a culture of continuous, evidence-based improvement of undergraduate education.

**Methods of Assessment**

Rating scale:
Best practices…3.0
Good progress…2.0
Progress slow or stalled…1.0

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<thead>
<tr>
<th>SAS Average</th>
<th>“Best practices” departments</th>
<th>Best practices:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.7</td>
<td>33/38</td>
<td>Investigation involves directly assessing student learning</td>
</tr>
<tr>
<td>2.8</td>
<td>19/23</td>
<td>Optional: Indirect assessment strategies (e.g., surveys of instructors about what’s working in their teaching) are well-designed to provide information that could be used to improve student learning</td>
</tr>
<tr>
<td>2.6</td>
<td>29/38</td>
<td>Methods used are appropriate to the question being asked and involve appropriate structure (e.g., rubrics, instruments, etc.)—within reason given the context (e.g., size of department, resources available, etc.)</td>
</tr>
<tr>
<td>2.6</td>
<td>29/37</td>
<td>Report includes samples of any relevant rubrics, prompts, instruments, etc.</td>
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</table>

*Summary:* The SAS Assessment Committee regards engaging in some form of direct assessment as the baseline expectation for any SAS department, and almost 85 percent of departments did so this year. Departments that did not will be offered additional support in developing assessment plans. Additional assistance will also be offered to the departments whose methods and/or assessment structure may not have been entirely appropriate for the question being asked.

As in previous years, a number of SAS departments engaged in various forms of indirect
assessment to complement their direct assessment activities.

Assessment Findings

Rating scale:
Best practices…3.0
Good progress…2.0
Progress slow or stalled…1.0

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<tr>
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<th>Best practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.6</td>
<td>30/38</td>
<td>Findings are presented with sufficient detail to enable an informed analysis of the department’s interpretation and plans for use</td>
</tr>
<tr>
<td>2.6</td>
<td>31/38</td>
<td>Interpretation of findings is reasonable</td>
</tr>
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</table>

Summary: This category provides feedback for departments about the level of detail they included when describing the assessment findings in their reports. Last year, only 59% of departments reached the “best practices” level in this category. The Assessment Committee emphasized the importance of including more detail about assessment results in its feedback to departments about last year’s reports, and we are pleased to see that this year, 79% of departments included sufficient detail about their findings to reach the “best practices” level. There was a corresponding increase in the proportion of departments designated as “best practices” in the reasonable interpretation of findings category this year.

Plans for Use of Assessment Results

Rating scale:
Best practices…3.0
Good progress…2.0
Progress slow or stalled…1.0

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</tr>
</thead>
<tbody>
<tr>
<td>2.7</td>
<td>33/38</td>
<td>Department is making reasonable plans to respond to findings (including plans to disseminate best practices or stay the course, in response to positive findings)</td>
</tr>
<tr>
<td>3.0</td>
<td>11/11</td>
<td>Optional: Assessment efforts follow up on prior year’s assessment investigations or curricular/pedagogical/etc. changes initiated in prior years</td>
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</table>

Summary: SAS departments continue to engage in evidence-based improvements of their instruction, and the proportion of departments reaching the “best practices” level in making
reasonable plans to respond to their assessment findings increased from 72% in 2021-22 to 87% this year.

This year we observed a number of departments focusing on improving the connections between their lower- and upper-level courses. While these departments took a variety of approaches to this topic, it was clear that these efforts are likely to positively impact intra-departmental communication, curricular coordination, and student learning.

For example, Cell Biology and Neuroscience reports:

This year’s assessment findings suggest that the tier structure of our major curriculum is sound and that our 200-level Fundamentals of Cell and Developmental Biology or Neurobiology prepare most students well for the corresponding 400-level Advanced courses. However, there were a few students who either objectively struggled with the upper-level course or did not feel confident about their preparedness. We (the CBN Curriculum Committee) will address this issue in the upcoming year as follows:

- All instructors for Advanced courses will review in detail the syllabus of the corresponding Fundamentals and meet with the instructors of these courses to identify potential gaps in knowledge or understanding.
- Instructors or Teaching Assistants in Advanced courses will plan to offer additional support and pay particular attention to students who previously struggled in Fundamentals in an attempt to fill their knowledge gaps.
- Additional questions will be added to the student exit survey next year to ask students directly what they struggled with the most in the Advanced courses.

Our ultimate goal is to suggest specific modifications to the content of the Fundamentals courses to ensure that students are adequately prepared for Advanced courses. Alternatively, the content of Advanced courses could be slightly modified to include additional background material in an effort to promote student success. We expect these modifications to be minor, but potentially have a big impact on the subset of students who are not well prepared as they progress to upper-level courses.

In Earth and Planetary Sciences:

To assess…if our students enter the upper-level courses with mastery of key concepts and skills taught in the survey/lower-level courses, pre- and post-tests were administered (Appendix 1). The questions focus on the knowledge and skills (from the introductory course) that instructors think are most important; the questions try to avoid jargon (or explain the jargon used) so that the focus is on concepts rather than terminology / nomenclature.

In addition to being an effective assessment tool, these pre-course tests are particularly useful for instructors:

The pre-course tests give instructors useful information about student readiness in their
15 of 23

courses. Questions on which students score poorly highlight topics that require review and/or additional basic instruction. In all four classes, it was clear that students had no prior knowledge about certain topics. Because these topics are critical for performing well in each of the classes, instructors all spent additional class time covering these topics.

Meanwhile, in Economics, similar efforts prompted reflection on the best approach to integrating and activating students’ prior knowledge in advanced courses:

Our thinking/conclusion was that it is a best practice in these courses to do a bit of review and reminding to students of what they are meant to have gotten out of these courses and how they are important in the context. …it is a best practice to “spiral” around, indicating to students that you are referring back to something they may well have been exposed to before (but may not have been as well) in a math class, say, or in intermediate microeconomics or econometrics, and indicating how you are going to be making use of this in the present context of the elective course they are currently taking with you. One needs to be constantly doing this kind of spiraling in order to tie together what may appear to the student to be disparate elements into a coherent framework. This suggests that student success in upper level elective classes is, in part, a matter of integrating things they are being studying and, at some level, may “know,” but are not initially able to clearly articulate.

Other departments are working on efforts along similar lines, including the Department of Psychology, where this year’s assessment efforts included a survey of faculty teaching core major courses about the topics they want students to understand when beginning their courses. These surveys are the beginning of an initiative—which the department plans to continue into next year—to engage General Psychology and core major instructors in coordinating curriculum.

Conclusion

As the examples above demonstrate, assessment practices in SAS are an important tool for maintaining excellence in undergraduate education and promoting a culture of continuous evidence-based improvement. SAS emphasizes sustainable, authentic assessments that provide valid practical information which is used to inform decision-making about how to improve student learning outcomes.

This year, we have made a special effort to showcase the diversity, range, and impact of departmental assessment efforts in SAS. As the Rutgers–New Brunswick Academic Master Plan is implemented and the entire institution redoubles its focus on student success, SAS departments’ engagement in assessment efforts helps make them well-prepared to contribute to those efforts in a multiplicity of ways.

Submitted on behalf of the SAS Assessment Committee by

Sharon Bzostek, Senior Associate Dean for Undergraduate Education

David Goldman, Director of Teaching, Learning, and Assessment
SAS Assessment Committee, 2022–23
Linnea Dickson, Psychology
Mary Emenike, Chemistry & Chemical Biology
Åsa Rennermalm, Geography
Charles Ruggieri, Physics
Jenny Yuan-Chen Yang, Asian Languages and Cultures
Learning Goals

In this space, please list your program’s learning goals and provide the url where they are posted on your website.

Are learning goals on syllabi?

How many department/program syllabi include appropriate learning goal statements? (Select one)

Overwhelming majority | More than half | About half | Less than half

Where are program learning goals achieved?

In this space, please indicate where in your program students achieve mastery of your learning goals: for each goal, identify which course, group of courses, or other curricular requirement most directly supports student mastery of that goal.

What question about student learning did your department investigate this year?

In this space, please state the question about student learning that your department investigated this year.

Your question should be useful—answering it should help to inform your department’s decisions about curriculum design, instructional practices, student advising, or other factors...
that impact student learning—and answering it should involve directly examining student learning.

The SAS Assessment Committee’s first priority is ensuring that assessment provides departments with useful information. For guidelines and examples of useful assessment questions, please visit sasoue.rutgers.edu/program-assessment/guidelines or contact SAS Director of Teaching, Learning, and Assessment David Goldman at dgoldman@sas.rutgers.edu.

**What methods did you use to answer your question about student learning?**

In this space, please provide a brief overview of the way your department gathered information about student learning to answer the question posed above. Be sure to include a description of the student work that was examined and include any prompts, rubrics, or other instruments that you used.

**Findings**

In this space, please summarize your findings and your interpretation of your findings.

**Please briefly explain how your department has used, or plans to use, the information collected.**

In this space, please briefly describe how the assessment results were shared, or will be shared, with the faculty in your department. Then identify your department’s next steps and the timeframe during which your department expects to take its next steps.
## Appendix B: Pilot Assessment Report Rubric

<table>
<thead>
<tr>
<th></th>
<th>Best Practice</th>
<th>Making Good Progress</th>
<th>Progress stalled, disrupted, or unclear</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sustainability</strong></td>
<td>An appropriately sized assessment committee (given the size of the department or program) exists; similar assessment efforts can realistically be repeated in future years, even with changes in UGD or other important staff</td>
<td>Some concerns that sustaining assessment effort in future years may be challenging</td>
<td>Assessment effort is solely dependent on undergraduate director (except in extremely small departments or programs), or is unlikely to be sustainable in future years</td>
</tr>
<tr>
<td><strong>Learning Goals and Curriculum</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program learning goals</td>
<td>Program learning goals are provided</td>
<td>Program learning goals not provided</td>
<td></td>
</tr>
<tr>
<td>Learning goals on syllabi</td>
<td>Overwhelming majority of syllabi include learning goals</td>
<td>Majority of course syllabi include learning goals</td>
<td>≤ half of course syllabi include learning goals</td>
</tr>
<tr>
<td>Learning goal mapping to curriculum</td>
<td>Clear mapping of learning goals (or levels of learning goal mastery) to courses or curricular requirements</td>
<td>Goals are clearly met within program, but specific mapping is unclear or incomplete</td>
<td>Not clear where or if learning goals are met in curriculum</td>
</tr>
<tr>
<td><strong>Optional:</strong> Learning goal maintenance (if applicable)</td>
<td>Learning goals were updated or revised; process for doing so is inclusive of department faculty, students, and other stakeholders as appropriate</td>
<td>Learning goals were updated or revised; process is unclear or limited in scope</td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Question being investigated is likely to yield information that could be used to improve student learning</td>
<td>Question being investigated may yield information useful for improving student learning</td>
<td>Connection between the question being investigated and improving student learning is unclear</td>
</tr>
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<td>-------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Methods</th>
<th>Investigation involves directly assessing student learning</th>
<th>No direct assessment of student learning</th>
<th>Indirect assessment strategies (e.g., surveys of instructors about what’s working in their teaching) are well-designed to provide information that could be used to improve student learning</th>
<th>Indirect assessment strategies may provide useful information</th>
<th>Indirect assessment strategies are not likely to provide useful information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Optional:</strong> Indirect assessment (if applicable)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Indirect assessment strategies (e.g., surveys of instructors about what’s working in their teaching) are well-designed to provide information that could be used to improve student learning</td>
<td>Indirect assessment strategies may provide useful information</td>
<td>Indirect assessment strategies are not likely to provide useful information</td>
<td></td>
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</tr>
</tbody>
</table>

<p>| Appropriateness                                                        | Methods used are appropriate to the question being asked and involve appropriate structure (e.g., rubrics, instruments, etc.)—<strong>within reason</strong> given the context (e.g., size of department, resources available, etc.) | Methods used may address the question being asked | Methods used do not address the question being asked |                                                                                 |                                                                                 |</p>
<table>
<thead>
<tr>
<th><strong>Supplementary materials</strong></th>
<th>Report includes samples of any relevant rubrics, prompts, instruments, etc.</th>
<th>Report does not include samples of relevant materials</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Findings</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Completeness</strong></td>
<td>Findings are presented with sufficient detail to enable an informed analysis of the department’s interpretation and plans for use</td>
<td>Generalizations about findings are reported, with minimal supporting detail</td>
</tr>
<tr>
<td><strong>Interpretation</strong></td>
<td>Interpretation of findings is reasonable</td>
<td>Interpretation is unclear or unsupported by the reported findings</td>
</tr>
<tr>
<td><strong>Plans for use</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Plans</strong></td>
<td>Department is making reasonable plans to respond to findings (including plans to disseminate best practices or stay the course, in response to positive findings)</td>
<td>Department’s plans for response are unclear or not responsive to their findings</td>
</tr>
<tr>
<td><strong>Optional:</strong> Multi-year assessment efforts</td>
<td>Assessment efforts follow up on prior year’s assessment investigations or curricular/pedagogical/ etc. changes initiated in prior years</td>
<td></td>
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<td>-------------------------------------------</td>
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</tbody>
</table>


Appendix C: Percent of SAS Departments at Each Level on Rubric, 2022-2023

Percent of SAS Departments (N=45) at Each Level on Checklist Rubric, 2022-2023 (with 2021-2022 as comparison)

- 3 = Exemplary
- 2.5 = Very Good Progress
- 2 = Making good Progress
- 1.5 = Making some progress
- 1 = Needs to make progress
- NA

### GENERAL
- Sustainability
  - 2021-22

### LEARNING GOALS AND CURRICULUM
- Program learning goals
  - 2021-22
- Learning goals on syllabi
  - 2021-22
- Learning goal mapping to curriculum
  - 2021-22
- Optional: Learning goal maintenance (if applicable)
  - 2021-22

### QUESTION
- Potential for yielding actionable information
  - 2021-22

### METHODS
- Direct assessment
  - 2021-22
- Optional: Indirect assessment (if applicable)
  - 2021-22
- Appropriateness
  - 2021-22
- Supplementary materials
  - 2021-22

### FINDINGS
- Completeness
  - 2021-22
- Interpretation
  - 2021-22

### PLANS FOR USE
- Plans
  - 2021-22
- Optional: Multi-year assessment efforts
  - 2021-22