

March 28, 2025

To: Jonathan Holloway
President

From: Prabhas V. Moghe 
Executive Vice President for Academic Affairs

Re: Response to Senate Charge S-2204-2: Impact of CourseAtlas

I am writing in response to the University Senate's report and recommendations on Charge S-2204-2: Impact of CourseAtlas.¹ I have consulted with the appropriate offices and provide a summary of their responses below. As always, the University welcomes feedback from the University Senate in the interest of continual improvement.

Before addressing the charge and the recommendations, it is necessary to introduce three notes of clarification to provide additional context:

- CourseAtlas is not a “replacement for the prior version” of a course scheduling system: it is the first course scheduling system used by the University. The system commonly known as CSS (Course Scheduling System) is actually a misnomer: it did not and does not schedule courses; it is simply a course information repository (more accurately, it is a web portal that provides users access to course information stored in the Course Data Warehouse). When the University first began investigating this issue, we were the only university in the Big Ten that did not rely on a modern course scheduling system. Indeed, a University Task Force could not find another large research university that did not rely on a software solution to schedule courses.

Prior to the introduction of CourseAtlas, Rutgers simply “rolled” (copied) courses forward from one like semester to the next (i.e., Fall '18 became Fall '19). Among the obvious limitations to this static process, the “rollover” did not: systematically adjust to dynamic course variables (i.e., changing enrollments, student housing choice trends, new classroom stock, etc.); measure student demand systematically and adjust accordingly; and, perhaps most importantly, manage common “blocks”

¹ As S-2204-2 focuses almost exclusively on Rutgers–New Brunswick, this response refers to operations at Rutgers–New Brunswick, except where it explicitly states otherwise (e.g., direct references to Camden, Newark, University-wide, etc.).

of courses across departments that students require, creating bottlenecks that impact time-to-degree, all of which placed Rutgers at a distinct disadvantage.

- The CSS web portal is still in use on all of the legacy campuses, not just Camden and Newark. Indeed, because of how courses are indexed for registration on all legacy campuses, Camden, Newark, and New Brunswick all follow the same essential processes and procedures: each Fall and Spring semester's schedule is created in CourseAtlas (the name for the vendor software used in New Brunswick) and then moved to the University mainframe, where the courses are indexed for student registration. Once the course information is in the mainframe, users on all three campuses use the CSS web portal to access the course information.
- Though CourseAtlas was largely invisible to much of the community during the pandemic, it was central to the University's pandemic response. The fact that CourseAtlas rolled out just prior to the start of the pandemic was, of course, completely coincidental. But Rutgers is extremely fortunate to have benefited from that coincidence. Stated simply, the University would not have been able to completely overhaul its course offerings—making fundamental changes during three successive semesters—without the aid of a modern software system, which allowed Rutgers to continue scheduling courses during this unprecedented disruption to University operations, enabling our students to continue their studies and pursue their degrees.

Response to Charge S-2204-2

Explore the impact of CourseAtlas to benchmark institutional goals of the system, on academic units and departments, on faculty work-life balance, and make recommendations as appropriate. Specifically:

- (i) *Investigate to what degree CourseAtlas has achieved the goals it was designed and implemented to achieve*

CourseAtlas has been an unqualified success in achieving its stated project goals. It is important to stress that the Office of Academic Scheduling and Instructional Space (OASIS) has made continual, documented adjustments to processes and procedures in response to feedback from schools and departments, and they are committed to continual improvement. It is important, too, to stress that, thanks to the painstaking efforts of teams of people over the course of several years and four successive parallel scheduling simulations over two years designed to rigorously test and validate the system, the software launched without *any* technical issues, and it has been running without any notable technical incidents for five years.

1. *Reduce bottlenecks and course conflicts that impact our students' time-to-degree;*

Fundamental to the CourseAtlas software are so-called “course combinations” and “academic blocks,” curricular tools that eliminate course conflicts and enable students to progress toward their degrees without facing bottlenecks. OASIS scheduling analysts work directly with schools and departments to determine which specific solution is best for their needs (e.g., making sure courses within a department do not conflict, to maximize student choice; ensure there are enough seats available for cohorts of students to schedule common sets of courses across different departments, preferably on the same campus, without conflict; etc.). With 25,000 course sections offered each year across 6 geographic campuses in 12 schools and over 120 departments, it is simply not possible to account for potential course conflicts without the aid of modern software. These course combinations and academic blocks are managed, tracked, and continually reviewed and updated in consultation with schools and departments to ensure they are achieving their ends.

2. *Decrease unnecessary course-related student travel, enabling our students to spend their time in class or studying, as opposed to on the buses;*

Of the stated project goals, the University has made only modest reductions in course-related student travel because departments continue to have the ability to choose the preferred campus for each course section. The software does have the ability to choose the campus location that is most convenient for students, which would dramatically reduce student course-related travel—moving courses to where the students are, as opposed to moving students where the faculty are—but this solution is not currently being employed.

The software has assisted with some reduction in course-related travel by providing departments with student residential information at the course level (where students who have historically taken these courses live on a rolling 6-semester average), and some departments have taken advantage of this tool to adjust where they are offering courses. OASIS also created dashboards to monitor course-related student travel each semester, which are shared with schools in an effort to encourage intentional campus assignments that reflect student residential patterns.

3. *Facilitate curricular planning by schools and departments, ensuring they can offer the courses they require in the appropriate sizes and in the appropriate classrooms;*

Course combinations and academic blocks do not merely benefit students: they are essential to managing departmental offerings. Again, they are tailored by each department according to their specific needs, but they also ensure that courses do not conflict with those in other departments (e.g., making sure a Classics course on terminology that is taken by Premed students does not conflict with their STEM

courses).

The software provides granular control by departments down to the individual meeting level, giving them the ability, for example, to determine whether they want labs and recitations to be scheduled before, between, or after lecture sections. And, of course, departments have complete control over determining variables like max enrollments, preferred campus, preferred building, and preferred room type: they can select new section requirements each semester according to changing needs.

4. *Manage school and University enrollments by enabling growth in disciplines and areas where there is higher student demand;*

Because the software is dynamic, critical course information can be adjusted from semester to semester. For example, prior to the introduction of a scheduling system, our fast-growing departments were only able to utilize rooms that were “left over,” which essentially meant first period and evenings, resulting in courses that were in most demand by our students being scheduled in the least desirable times. Moreover, courses with declining enrollments were “locked” into rooms that were no longer suitable for their course size, which created a two-fold problem: the larger rooms were no longer a fit pedagogically for the course (i.e., a now seminar-sized course in a large classroom) *and* the room was not available for larger enrollment courses that required an appropriately sized room. CourseAtlas helps to promote equity across departments, taking into account each semester the specific needs for each course section.

5. *Enable better institutional planning of instructional spaces to ensure our faculty and students are teaching and learning in high-quality classrooms.*

Using CourseAtlas data, OASIS has created dashboards that are shared with Institutional Planning and Operations (IP&O) that display the number of course sections offered each semester in the different classroom capacity group ranges and the number of classrooms necessary in each capacity group to deliver those courses, providing continually up-to-date information on supply and demand, and these dashboards are critical in assisting IP&O with classroom planning efforts. In addition, because CourseAtlas is a dynamic system, classrooms can easily be taken offline to allow for renovation and routine maintenance, and new classroom stock can be immediately added to the system, with the campus schedules being updated seamlessly. OASIS has also used CourseAtlas data to create dashboards that track course-related student travel across each day, which provide up-to-date information for IP&O on course-related student travel patterns, which are used to inform bus routes and peak demand.

- (ii) *explore the impact of CourseAtlas on academic units and departments’ ability to manage their own academic programs*

As item 3 above notes, CourseAtlas provides an array of tools to assist academic units and departments with their curricular planning, providing a level of control over their offerings that was hitherto not possible. Importantly, the use of these tools can be completely customized by each academic unit or department according to their specific needs. The information that is programmed at the department level, with the assistance of the scheduling analysts from OASIS, is maintained in the system and can be updated and modified each semester, according to any changing requirements. In addition, in response to specific requests from schools and departments, OASIS has made continual adjustments to its processes, including:

- Creating a change request process for course schedule changes that includes school dean oversight for any substantial changes (dropping of courses, changing day/time of courses, changing campus of courses) after the Schedule of Classes (SOC) has been published to students.
- Enabling view-only access to CourseAtlas throughout the course scheduling timeframe, including when OASIS closes the system for editing, so that departments can refer to their submitted schedule requests while OASIS creates the provisional schedule.
- Creating downloadable schedule grids for rooms, faculty, and sets of courses through the CourseAtlas interface for easy distribution to faculty.
- Creating the ability to request Active Learning classrooms, even if there are none on the desired campus, so that alternatives can be found and so demand can be measured.
- Introducing a wider variety of room attributes for departments to use when selecting classrooms, including the type of seating, type of student writing surface, type of boards in the room (dry-erase, chalk, glass), etc.
- Creating new time period options for class assignments, including “Morning”, “Daytime +”, and “Graduate 6-9pm”.
- Creating custom reports for departments to use in CourseAtlas.

(iii) assess the impact of CourseAtlas on the work-life balance of faculty

In 2018, a New Brunswick Scheduling Committee, comprised of faculty and faculty administrators—including four members of the New Brunswick Faculty Council—was established and met over the course of several months, and the committee submitted an extensive memorandum with recommendations for the testing and implementation of the scheduling software platform, and every one of those recommendations was incorporated into what is now CourseAtlas. Notable among the recommendations was the creation of a mechanism to collect preferred availability from faculty and instructors to be used during the scheduling process. The implementation team worked with campus partners in the Office of Information Technology (OIT) to create an entirely new web portal from scratch,

using the exact template provided by the committee. It is worth noting, too, that, after extensive testing and simulation by the OASIS team, the change was made to *reduce* the minimum availability requested from faculty and instructors that was suggested by the committee: the current portal requests that faculty and instructors indicate when they prefer to be available for at least *half* of the schedulable periods per week.

(iv) propose feedback mechanisms which allow timely and meaningful faculty input on scheduling changes

There are numerous avenues available for departments to provide “timely and meaningful” input on scheduling-related matters, and OASIS continues to document and share the adjustments made to the scheduling process in response to direct feedback. Specifically, scheduling analysts meet each semester with departments to discuss their specific needs. In addition, the director and the assistant director from OASIS meet regularly with school and department leadership to address specific requests and to gather feedback. Finally, the Undergraduate Education Council, led by the Vice Chancellor for Undergraduate Education, gathers feedback from schools and departments regarding scheduling-related items, and there is a subgroup within the council that is dedicated to monitoring issues related to course scheduling.

Response to Recommendations from S-2204-2

The office of Academic Scheduling and Instructional Space should immediately convene a task force comprised of instructors and schedulers in New Brunswick.

As noted in item iv above, there are currently numerous avenues available to provide direct feedback regarding scheduling-related items, and interested faculty, faculty administrators, and staff are encouraged to take advantage of these opportunities. And, again, OASIS is committed to continual improvement, and the many substantial adjustments to scheduling processes have been both documented and communicated with departments.

Representative advisory groups, committees, working groups, and task forces are hallmarks of healthy institutions of higher education. Implicit in that model is the need for members of the community to respect the time, effort, and deliberations that those representatives contribute on behalf of the community. The need to overhaul the University’s course scheduling processes and implement a modern scheduling system were first identified during the strategic planning process and articulated in the 2014 *University Strategic Plan*. The plan was developed by: an 11-member Executive Steering Committee; Advisory groups totaling 107 members, including School deans, faculty, staff, and students; and 13 strategic planning committees, with more than 400 faculty, staff, students, administrators, board members, and alumni. The findings of the *University Strategic Plan* were echoed the

following year in the *Rutgers–New Brunswick Strategic* plan and further articulated in *Rutgers 2030: Rutgers Physical Master Plan*, which was also released in 2015.

Former President Barchi highlighted the findings from the strategic plans and the physical master plan regarding course scheduling in his State of the University addresses in 2015, 2016, and 2017. He created a 25-member Presidential Task Force (comprised of faculty, staff, and administrators and co-chaired by the then Dean of the School of Arts and Sciences) on course scheduling, student registration, housing, and transportation efficiencies to develop specific recommendations, and this task force completed its work during 2015-2016. The principal recommendation from the task force was to implement a state-of-the-art scheduling software platform. Following the task force recommendation and the creation of an RFI and RFP, a 21-member Platform Selection Committee received formal proposals from 6 leading scheduling vendors, who were brought to campus for formal presentations and demonstrations. The committee brought the 3 strongest respondents back to campus for follow-up presentations and demonstrations. Infosilem was the *unanimous choice* because the committee was convinced this was the only solution that could account for the unique geographic layout of the Rutgers–New Brunswick campuses, our multiple period grids, and our complex course offerings.

During the implementation of the platform from 2017 to 2020, the 9-member Implementation Team met monthly with a 19-member Implementation Advisory Team, which was comprised of a cross-section of staff and faculty from different academic units, to brief them on implementation progress. The advisory team representatives provided guidance and feedback in consultation with colleagues from their respective schools and departments. In addition, information and updates on the course scheduling project was provided to the campus community on an ongoing basis through a number of different channels, including:

- Town hall meetings open to the entire campus community;
- 15 group training sessions and 30 additional individual department trainings to school and department staff and faculty;
- Regular announcements, updates, and requests for information provided by the scheduling team to New Brunswick faculty and staff directly involved with the course scheduling process.
- A scheduling working group made up of a cross-section of faculty and staff, met for ongoing periodic meetings on scheduling-related topics, including system/process changes

Finally, as noted above, a 19-member New Brunswick Scheduling Committee, comprised of faculty and faculty administrators—including four members of the New Brunswick Faculty Council—met during the implementation of the platform, and the committee provided substantial, documented feedback, which was incorporated in its entirety into what is now

CourseAtlas. It would be difficult to name any project or initiative that has undergone as much documented vetting, deliberation, analysis, and review as the course scheduling system initiative.

CourseAtlas schedule shall avoid conflicts with the instructors' preferences submitted.

The OASIS team was unable to find any instances where the preferred availability instructors provided through the online portal were not accounted for during the scheduling process, *except* where those preferences were overridden by a department. In those cases, OASIS receives a conflict report, contacts the department to make them aware of the conflict, and confirms that they wish to override the instructor's preference to meet their course delivery needs.

I want to thank the University Senate, in particular the members of the Faculty and Personnel Affairs Committee, for sharing the Response to Charge S-2204-2: "Impact of CourseAtlas." I value these important mechanisms designed to promote open dialogue on issues that are important in achieving our shared goals, and I look forward to these opportunities to provide further context and clarity on aspects of University administration.