

University Senate Plenary

March 4, 2022



University Senate

Proposed: March 4, 2022

Adopted: March 4, 2022

PROPOSED AGENDA

University Senate

Friday, March 4, 2022 at 1:15 p.m. via Zoom

Registration required

After registering you will receive a confirmation email with meeting details.

1. Adoption of the agenda
2. Adoption of the minutes of February 4, 2022
3. President's report
4. Executive Committee Chair's report:
 - a. Commencement 2022
5. New business:
 - a. Resolutions
 - i. Resolution to Approve an Academic Program Leading to the Master of Science in Quantum Science and Technology (School of Engineering and Applied Science): Education Committee
 - b. Committee reports and updates
 - i. Practice and performance space initiatives update: Campus Planning and Physical Development
 - c. Other reports and updates:
 - i. Retirement program update: Anne Sullivan, Executive Vice President for Finance and Information Technology

MEETING OF FEBRUARY 4, 2022

Executive Committee chair Jeanine D'Armiento (Ten., VP&S) called the Senate to order at 1:15 pm on Zoom. Seventy-five of 99 senators were present during the meeting.

Sen. D'Armiento welcomed senators to the first meeting of 2022, recognizing that they had had to deal with the recent surge of the Omicron variant of Covid-19. She was thankful that it was milder than the Delta variant that preceded it, and that the Columbia community was well vaccinated, and now appeared to be turning the corner on Omicron. She appreciated the adjustments student and faculty had had to make in continuing remote instruction for the first two weeks of the present term. In a conversation with her medical colleagues, they had recognized that while they might have known someone with Covid in one of its earlier forms, they all probably knew numerous people with Covid during Omicron. But she was encouraged that Covid cases were dropping, and optimistic about 2022.

Adoption of the agenda. The *agenda* was adopted as proposed (see plenary binder for February 4 plenary, page 2).

Adoption of the minutes. The [minutes](#) of December 10, 2021 were adopted as proposed (binder, 3-6).

Chair's remarks. Sen. D'Armiento said the president was absent. She invited senators to send questions to her, to forward to him.

Update on the current public health situation from Dr. Melanie Bernitz, Senior Vice President for Health. Dr. Bernitz gave her presentation, referring to a set of [slides](#) (binder, 7-28).

When she was done, Sen. Jeremy Wahl (GS), co-chair of the Student Affairs Committee, thanked her for the recent decision to extend the deadline for booster vaccinations for students who were recovering from recent Covid infections. He said a SAC poll had yielded the following three questions:

- A sizable number of student requests for medical exemptions from the booster requirement, some of which included recommendations from the students' personal physicians, were being rejected. Why? This issue also stirred student concerns about the University's access to protected health information (PHI).

Dr. Bernitz responded that a student who requests an extension is effectively consenting to share his or her PHI. She added that requests for exemptions that go to the committee deciding these issues are de-identified. She said the six-member Public Health Committee, representing a range of medical specialties, consults the guidelines of the Centers for Disease Control and other national organizations, and proceeds by consensus.

Sen. Wahl asked why the recommendations of personal physicians were being rejected.

Dr. Bernitz said she couldn't comment on individual cases without having all the relevant information. But she repeated that particularly in individual cases where opinions may vary, it is important to proceed by consensus, following national guidelines.

Sen. D'Armiento said she recognized the kinds of concerns students were raising, and encouraged SAC leaders to pursue them with Dr. Bernitz after the meeting.

- Sen. Wahl, noting new University requirements for surgical masking, asked if the administration would be managing the distribution of this significantly more expensive equipment. Dr. Bernitz said surgical masks were being made available at certain central campus locations to help people making the transition from cloth to surgical masks, but there were no plans to underwrite surgical masking over time. She said Public Safety officers stationed at main campus entrances have some masks to give out to people there.

Sen. D'Armiento suggested that the Office of University Life could put out notices explaining where students could conveniently pick up surgical masks. Dr. Bernitz welcomed this idea.

- Sen. Wahl asked why the University couldn't accept at-home antigen testing in lieu of Columbia-administered testing, just as it recently accepted PCR testing administered off campus in place of Columbia-administered PCR testing. Couldn't the University revisit this policy, and accept both tests?

Dr. Bernitz said Columbia's current policy follows current CDC guidance. She said one important difference between the two kinds of tests is that PCRs can stay positive over a prolonged period, whereas the results of antigen tests can fluctuate. But she said she would raise this question with the public health committee.

Sen. Lauren Wranosky (Stu., SW) said the SAC Mental Health and Well-Being Subcommittee, of which she is a member, had raised the question of whether access to Covid testing could be expanded for symptomatic students.

Dr. Bernitz said it was not possible to provide testing for symptomatic people at Columbia's mass sites. That's why she was pushing to provide at-home antigen tests for this group. Another possibility, now available at the student health centers on both main campuses, was rapid PCR testing.

Appointments to the University Judicial Board (Section 445c, Rules of Conduct). Sen. Tina Lee (TC), SAC Vice Chair, read the names of five students recently appointed to the *University Judicial Board*, the panel that judges and determines sanctions for charges of violations of Columbia's Rules of Conduct concerning political demonstrations and rallies ([binder](#), 29-32). The UJB has five members and 10 alternates, drawn from the faculty, the student body and the non-instructional officer population. The new student appointees are Catherine Li (CC), Rohan S. Naik (Law), Julu Nwaezeapu (Barnard), Owen Robinson (Law), and Jenna Yuan (CC). Sen. Lee said they were chosen from an impressive and rigorously vetted group of over 100 applicants. All five will serve as alternates until the two current student UJB

members—Kayleigh McCormick (CC) and Peter Trevino (GS)—graduate in May. New appointees Owen Robinson and Jenna Yuan will succeed them at that point as student members.

Sen. D’Armiento also announced the name of a new faculty appointee to the UJB: Prof. Mignon Moore, who had represented the Barnard faculty in the University Senate from 2017 to 2021. Sen. D’Armiento congratulated all of the new appointees.

Sen. D’Armiento concluded her remarks by expressing satisfaction that Student Workers of Columbia-UAW had ratified a new contract with the University. She said the Senate had been neutral in this matter, but the faculty caucuses had held a number of town hall meetings during the final stages of the negotiations to inform themselves about the main issues. She thanked the faculty senators who had participated in these meetings.

New business

Committee reports and updates

CUIT updates regarding Duo multifactor authentication and Student Information Systems (SIS): Gaspare LoDuca, Chief Information Officer and Vice President for Information Technology, and Barry Kane, Associate Vice President and Registrar (Information and Communications Technology Committee).

Mr. LoDuca said CUIT planned to expand its use of Duo, its multifactor authentication program. He said many Columbia people have used Duo on their Columbia web applications containing sensitive data. Typically, they receive a notification from their phone, which they accept to receive access to their web program. But it would now be used on all apps requiring Columbia authentication. There are a number of good reasons to do this, Mr. LoDuca said, but the main one is the constant trend toward more serious cybersecurity threats, which has required ever higher levels of security. The new precautions, to be enacted in March, will reduce Columbia’s bill for cyber insurance, which rose by a factor of 4 during the past year. If Columbia IT security had been breached without having safeguards like these in place, the total cost would have been a lot worse. Mr. LoDuca said the Trustees are now expecting the improvements he was describing. And though Columbia students had not yet been forced into the Duo program, more than 20,000 of them had opted into it since 2018.

Mr. LoDuca said CUIT would be sending out communications and guides, adding up to a massive effort to make sure everyone sees this coming.

Once people have the Duo program, they will have to use it daily. But to make the system a little less onerous, CUIT will not require more than one challenge in a 24-hour period (Duo-protected systems now typically include two challenges a day). And after that one challenge, Columbia users will be spared any further challenges on any Columbia web applications for the next 24 hours. The new Duo requirements will also make it unnecessary to change uni passwords every 90 days. These simplifications in procedure should balance the inconvenience of adding the daily challenge, and Columbia users will be a lot more secure, Mr. LoDuca said. Added security measures like these are now the industry standard. He invited questions.

Sen. D'Armiento read a question from the Chat: What happens if you lose your phone?

Mr. LoDuca said a simple call to the Help desk would provide sufficient guidance for users, who would also be able to receive their Duo call on a home phone or an office phone. They could also get a list of one-time-use passcodes.

Sen. Henning Schulzrinne (Ten., SEAS) asked whether CUIT would provide the "keys" that are sometimes used to provide added security.

Mr. LoDuca said CUIT doesn't do that. It does provide one-time codes.

Sen. D'Armiento read another question from the Chat: Will the new expanded Duo cover LionMail? Clio? The Columbia Libraries? The answer was yes.

Sen. Shelley Saltzman (TTOT, SPS) said some classrooms that are not cookie-enabled require the Duo process more frequently than every 12 hours.

Mr. LoDuca said that when people sign in, there's a little checkbox that says, Remember me for 12 hours. If that isn't checked, the user will get challenged again. This point would be made very clearly in the documentation for the Duo expansion.

Sen. Saltzman said classroom computers are different. Mr. LoDuca said he would send a team out to fix these problems if Sen. Saltzman could email him the classroom numbers.

Sen. D'Armiento read a question in the Chat from Sen. Daniel Savin (Research Officers): For those who travel abroad, does Duo function the same everywhere? In addition, can the cost of the required cellphone service be charged to research grants?

Mr. LoDuca did not address the question about research grants. He hadn't heard of any problems with international travel. But he said he would check it out.

Sen. D'Armiento said people on research grants at the uptown campus have used Duo for some time, but not for Columbia University apps. She thought the Columbia procedure is quite easy to use, and the prospect of not have to keep changing passwords every 90 days would be helpful. She said the fact that Columbia officers don't have to keep changing their password would be very helpful.

Presentation from Barry Kane, University Registrar: The SIS [Student Information System] Replacement Project. Mr. Kane presented his report, referring to a set of [slides](#) (binder, 33-41)

At the end of the presentation, Sen. Schulzrinne asked if the new system could make it easier for faculty who advise students to get access to their academic records, perhaps by making the records accessible to the advisees.

Mr. Kane referred the question to Monica Avitsur, Deputy Registrar. She said her office was working on access issues right now, including rules and permissions. She said the new procedure would simply migrate people who have access now to the new system, and not require them to reapply. The new protocol would include a new access form, incorporating necessary training and other steps. She invited anyone with access issues to contact her directly.

Sen. Schulzrinne said he had once written a program to enable the Computer Science Dept. to import academic records of their graduate students to follow their progress in detail. Were there APIs, or connections, that could make such a transfer possible now?

Mr. LoDuca took this question. He said the current system could function compatibly with APIs of the kind Sen. Schulzrinne was describing. He offered to discuss this request further offline.

Sen. Severin Fowles (Fac., Barnard) asked Mr. Kane to say more about the goal—mentioned in his presentation—of full integration of the Barnard student information system with the Columbia SIS. Would there be lingering disconnects?

Mr. Kane said that Barnard would always retain its own SIS. But progress would continue toward full integration of functions like cross-registration and course enrollment. He asked Sen. Fowles for an example of a current disconnect.

Sen. Fowles said there were sometimes problems with the timing of registration on the two sides of Broadway.

Mr. Kane said he had a close working relationship with his current counterparts at Barnard, with closely coordinated timing and rules for registration.

Sen. Valeria Contreras (Stu., Arts) asked about the possibility of an integrated cross-registration process. Now students have to go to the website of each school to figure out the relevant rules.

Mr. Kane said he had touched on this point in his presentation. When he convened a group of Columbia schools to discuss cross-registration, he found that most of the rules made by individual schools made sense, reflecting their unique academic environments. So it would not make sense to try to build a single set of cross-registration rules for the whole university. But the new SIS would incorporate the rules of each school and spell them out clearly for each student trying to cross-register.

Sen. D'Armiento thanked Mr. Kane and Mr. LoDuca for their presentations.

Adjourn. She adjourned the meeting shortly after 2:20 pm.

Respectfully submitted,

Tom Mathewson, Senate staff

University Senate

Proposed: March 4, 2022

Adopted: 59-0-0 (In favor -
opposed-abstained)

RESOLUTION TO APPROVE AN ACADEMIC PROGRAM LEADING TO
THE MASTER OF SCIENCE IN QUANTUM SCIENCE AND TECHNOLOGY
School of Engineering and Applied Science

WHEREAS a second revolution is underway in quantum science, following upon the first one in the first half of the last century, with major technological applications in computing, photonics, and other areas that have precipitated a rapid expansion of new industries and an acute shortage of candidates for key professional positions; and

WHEREAS the Columbia Physics Department (Arts and Sciences) and the Applied Physics and Applied Mathematics Department (SEAS) have joined forces to propose a new master's degree program to prepare students to work in this burgeoning field; and

WHEREAS Columbia's location in a global hub of digital and technological innovation and the scarcity (so far) of master's programs focusing on quantum technology at American universities offer exceptional opportunities for a Columbia program to play a trailblazing role; and

WHEREAS the proposed program at steady state would teach 50 students (30 from SEAS and 20 from Physics) and require 30 credits, to be completed by most students over three semesters, offering two tracks focusing on physics and two on engineering subjects; and

WHEREAS the Senate Education Committee has favorably reviewed the program, with particular attention to its efforts to assure first-rate professional opportunities for its graduates, and its readiness to make curricular adjustments to the rapid changes that are expected in this field;

THEREFORE BE IT RESOLVED that the University Senate approve the establishment of the Master of Science in Quantum Science and Technology, and

BE IT FURTHER RESOLVED that the Senate Education Committee will review the program five years after its expected launch in 2023.

Proponent: Education Committee



**PROPOSAL FOR A NEW DEGREE, NEW DEGREE FROM AN EXISTING TRACK,
NEW CERTIFICATE, OR NEW CERTIFICATION OF PROFESSIONAL
ACHIEVEMENT (CPA) PROGRAM**

Please insert the requested information in the table below:

Degree:	Master of Science
Program Name:	Quantum Science and Technology
If this program is currently a track in an existing program but has evolved as a stand-alone program, please indicate the program it's based on:	N/A
Sponsoring School(s):	The Fu Foundation School of Engineering and Applied Science
Proposed Start Date:	September 2023
Name and Email Address of the Primary Contact Person for this Proposal:	Alexander Gaeta: alg2207@columbia.edu Dmitri Basov: db3056@columbia.edu
Date of Proposal Submission:	November 2021

DESCRIPTION OF THE PROGRAM

Please complete the questions below and submit this document and the external reviewer list (if applicable) through the APAS system (<https://apas.provost.columbia.edu/>) to begin the review process. *Please note: Firefox is the recommended browser for APAS; functionality may be less optimal when using Internet Explorer or Chrome.*

1) Purpose

- A) Describe in one to two paragraphs the purpose of the proposed program, its target audience, its content, and its format/pedagogical approaches.

There are timely reasons to introduce a master's program in Quantum Science and Technology that spans the School of Engineering and Applied Science (SEAS) and the Graduate School of Arts and Sciences (A&S) and offers engineering and physics tracks. The explosive expansion of the quantum industry has led to an acute shortage of qualified candidates for today's and tomorrow's available jobs. These jobs are being created both in established high-tech giants such as Google, IBM, and Microsoft, and in hundreds of start-ups. As the industry matures, an increasing number of roles do not require Ph.D.-level employees but need more focused training than a bachelor's degree. A program that provides students with the right mix of skills – and understanding of quantum mechanics, underpinnings of the field with a focus on practical knowledge is needed. Complementary skills in hardware, experiment, and software are not only valuable but are critical for the industry's future leaders.

Additional motivations exist for students to pursue such a program. These opportunities range from: (a) SEAS or A&S undergraduates interested in receiving an advanced degree in engineering or physics, (b) students wanting to acquire master's-level credentials for specific jobs, and (c) students wanting better preparation for applying to a top Ph.D. program in science and engineering.

While designing a master's program, we studied other universities to learn from their experience. These programs included:

- University of Wisconsin
 - <https://guide.wisc.edu/graduate/physics/physics-ms/physics-quantum-computing-ms/#requirementstext>
- University of Waterloo (Canada)
 - <https://uwaterloo.ca/institute-for-quantum-computing/programs>
- University College London
 - <https://www.ucl.ac.uk/prospective-students/graduate/taught-degrees/quantum-technologies-msc>
- University of Glasgow
 - <https://www.gla.ac.uk/postgraduate/taught/quantumtechnology/>

- Australian National University
 - <https://science.anu.edu.au/study/masters/master-science-quantum-technology>
- University of Barcelona
 - <https://qt.eu/about-quantum-flagship/education/master-in-quantum-science-and-technology-barcelona/>

To the best of our knowledge, only a small number of U.S. universities (Wisconsin and Indiana-Bloomington) currently offer a quantum-related master’s program. We believe that other universities are in the process of creating master’s program in quantum science. For example, Harvard recently announced a Ph.D. program in quantum science and technology. The University of Chicago announced that it is in the process of certifying graduate programs in this area. In addition, the Physics Department Task Force¹ consulted potential employers in the quantum industry to better understand their needs and how we can work optimally with them. The proposed program takes into account these considerations.

The class size is an essential consideration in the nature of the program, and we conservatively estimate that we can begin our program with a cohort of 25 students and reach a steady state of 50 students (30 in SEAS track and 20 in the Physics track). The size of the global reservoir of impressive talent is likely orders of magnitude larger than our initial class size.

The proposed program will represent a collaborative effort between SEAS and the Physics Department. It will consist of 10 courses of study. Five of these courses would be required core classes, two would be selective, and the remaining three electives. The courses would primarily be taught by Physics Department faculty . Physics and SEAS faculty will design curricula, provide content for courses, provide faculty/instructors to teach, and offer internships to students. A number of Columbia faculty hold half-time appointments at the Flatiron Institute (a privately-funded institute with one department devoted to quantum physics) and these connections will facilitate access for students to Flatiron Institute’s extraordinary computational resources. The majority of classes will be in the traditional classroom format. We will have at least three new laboratory classes in quantum physics/technology. A research component will also be offered as an elective, as well as an industry-related research component and/or internship.

- B) How does the new program relate to ongoing programs? Will it replace any existing program(s)? Does the proposed program completely or partially duplicate (an) existing program(s) in any other unit of the University?

¹ Abhay Narayan Pasupathy (Chair), Ana Asenjo Garcia (Assistant Professor of Physics), Yuri Levin (Professor of Physics), and Szabolcs Marka (Walter O. LeCroy, Jr. Professor of Physics).

The new program is complementary to the ongoing BA, BS, MS and PhD programs in SEAS and Physics. The new program will not replace any existing programs but will enhance the Physics Department's ability to provide masters-level training in quantum science and technology. As far as we are aware, the proposed program does not duplicate any existing program in any other unit of the University.

2) Need

A) Why is the proposed program needed locally, statewide or nationally?

On the one hand, the quantum industry is undergoing rapid growth, and companies, including those based in the New York area, require specific expertise in quantum science. However, many of the relevant jobs do not require a doctoral degree. On the other hand, many students are keen to find jobs in the quantum industry, but their undergraduate training in quantum science is insufficient. The reach of the program is aimed to be global; we will recruit both domestic and international students. We expect that our graduates will find employment in a variety of companies in the United States, including those that have a presence in New York.

B) Have students at the University or elsewhere requested this program? How many?

The Physics Task Force has communicated extensively with other quantum science master's programs and industry, and it is clear to us that the global demand is extraordinarily high. We envisage that a number of Columbia undergraduate physics and engineering students could choose to enroll in the program to boost their employability in the rapidly growing quantum industry.

C) If the program is career or professionally oriented, have persons in the profession or career requested establishment of the program? Have the employment needs of professionals in the field been taken into account when designing the program?

Yes. As stated in 2A, above, the program suggested that these professionals can contribute to the Columbia program directly. For example, we plan to engage quantum experts to teach certain specialized units offered as part of the course, and/or provide equipment and resources for the student laboratories. All equipment will be housed within existing laboratories in Pupin Hall or Nevis laboratories. Some of the experiments will be run remotely from Columbia (equipment residing at the company location).

D) What other institutions in the metropolitan area and in the Northeast offer similar programs?

The University of Waterloo (Canada) runs a quantum master's program. Currently, as far as we are aware, no schools in the metropolitan area and in the Northeast United States offer such a program. However, we understand from colleagues in peer physics departments (e.g., Harvard, Maryland) that they are gearing up to offer a similar program.

3) Curriculum

- A) Provide a brief summary of the program, in the form of a one-paragraph catalog or website description.

The Quantum Science and Technology Master's Program at Columbia University is designed to attract highly motivated graduate students who wish to broaden their knowledge in this emerging field. The program will train students in both the fundamentals and the most advanced, cutting-edge developments in quantum science, including quantum computing and quantum information. Taught by Columbia's SEAS and Physics faculty, this program will immerse students in the diverse and dynamic research and learning culture of a leading educational institution, and connect them with quantum industry partners. The program curricula will be devised, developed, and implemented solely by Columbia faculty. The program co-directors will be responsible for all educational and financial decisions.

- B) Indicate the **minimum total number of credits** (or clock hours, as appropriate) required for completion of the program, as well as any other program requirements (e.g., final paper, field placement, capstone project). For Bachelor's programs, please indicate both the total number of points required for graduation (e.g., 124 or 128), as well as the minimum number of points within the major or concentration. Also note that the minimum number of points is 30 for Master's programs, 20-24 for Certificate programs, and 12 for Certification of Professional Achievement (CPA) programs.

This master's program will require a minimum of 30 credits. For the majority of students, the MS program will be completed in three semesters. Exceptional students will have an option to extend their education for a fourth semester, focusing on research by joining a faculty member's research group. Tuition will be waived for this fourth semester.

MS in Quantum Science and & Technology: Additional information

1. A brief layperson's overview of the field

In the first half of the twentieth century, the first quantum revolution gave us a new way of thinking about the way the world works and brought us technologies such as lasers, MRI machines, and the transistors that underpin all aspects of modern life. Today, the second quantum revolution is underway, and it is all about control. The coming generation of quantum technologies will be built on new physical principles and demand new materials, new methods of investigation, and new collaborations. At Columbia, we are tackling these demands together and training the next generation of quantum scientists and entrepreneurs. The proposed Quantum master's program will play an integral role in this broader vision at Columbia. Building on the collaborative culture long fostered at Columbia, the Quantum Initiative and Quantum master's Program are combining interdisciplinary expertise in materials science, photonics, quantum theory, and more, all while taking advantage of our unique position in the global hub that is New York to develop novel quantum technologies that will open new frontiers into how we compute through complex problems, communicate with one another, and sense the world around us.

2. Job market and professional advising

There are two aspects of career and professional advising that will be available to support these students. Professional Development & Leadership (PDL) is the educational support for students to make the transition to graduate school, be successful in their program, find a career, and then be successful in that career. This foundational support is coupled with specialized career coaching from a team of advisors who specialize by discipline. That team is also engaged with employer relations, allowing them to facilitate connections between students and industry partners.

Professional Development & Leadership (PDL): MS students at the School of Engineering and Applied Science are required to complete a zero-credit course to enhance the Columbia Engineering education by providing enrichment and development opportunities. The course assists students with in a number of ways, including:

- (1) obtain skills to find and keep a role;
- (2) learn how to grow and cultivate a career;
- (3) recognize effective leadership;
- (4) learn to become an effective team player and follower; and (5) cultivate ethical behavior and values.

Graduate Career Placement

MS students at the School of Engineering and Applied Science work with a dedicated career placement officer who specializes by discipline. This team focuses on both individual student coaching of their student cohort and employer relations for industry contacts in the relevant fields. The career coach will work individually with students on their job search and also facilitate events (employer info sessions, alumni coffee chats, industry panels, etc.) through which students can build their networks and make connections.

3. Ability to constantly and continuously update the curriculum in light of fast moving scientific and technological developments

The proposal for a master's program in quantum science and technology has been put forward by the leaders in the field whose experimental and theoretical research is in the vanguard of current activities. Naturally, these leading scientists will integrate the latest development fresh from research labs into their classes. Continuous updates of the curriculum will be an important feature of the proposed program.

Campus Planning and Physical Development

Plenary Update

March 4, 2022

A. Over the past 6 months the Campus Planning and Physical Development Committee has been investigating space needs for performing arts programs across the University, and, in particular, in relation to music and the arts, including the Department of Music (A&S), the School of the Arts, its MFA and Undergraduate Theatre Programs, as well as support for many extracurricular groups across the University.

1. We find that there is presently an ACUTE shortage of:

a. Performance spaces

b. Rehearsal spaces

c. Storage spaces for musical instruments, props, costumes, and related equipment.

Those spaces that are available are either extremely restricted as to their availability, are inadequate/inappropriate for the intended use, or, in the case of theater arts, lack adequate storage space.

2. The Committee believe that students in these programs, offered in what may reasonably be described as the performing arts center of the United States, if not the world, deserve higher quality facilities than the University presently provides, especially as two of our competitors, Princeton University and the University of Chicago have recently opened new performing arts centers.

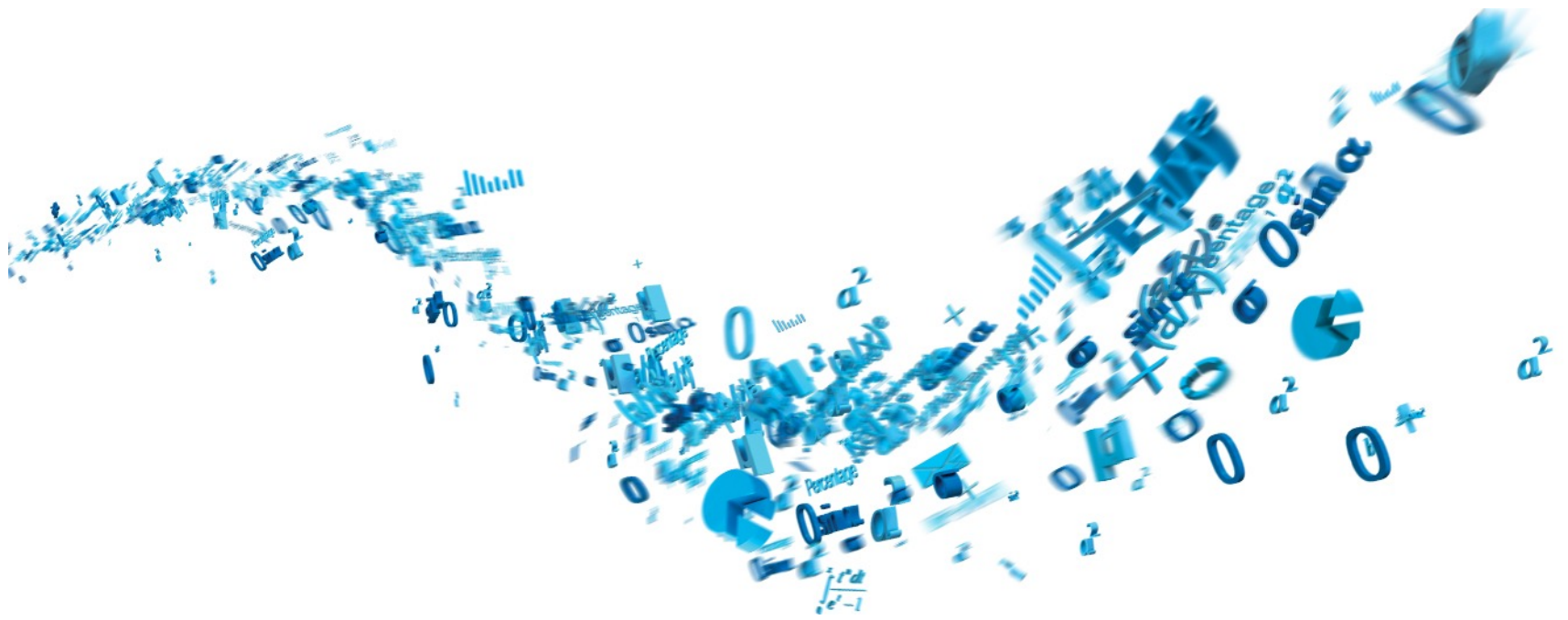
B. We provide a few representative statistics to illustrate the points enumerated above:

1. Each semester approximately 300 students (35-40% from Barnard College, the rest from Columbia College) are enrolled in the Columbia/Barnard Undergraduate Theatre Program. The 10-15 courses in this program require that 120-150 students rehearse between class sessions. For this program there is presently EXACTLY ONE CLASSROOM/STUDIO guaranteed available for rehearsals.
2. The Music Performance Program (MPP) in the Department of Music, a for-credit program that matches Columbia students with world class musicians in New York City, currently enrolls roughly 500 students, some of which are individual and others of which group themselves into some 42 ensembles. Presently there are 8 unrestricted practice rooms available to MPP students in Shapiro Hall. These same 8 rooms are also available to over 2000 Columbia affiliates that are allowed access for whatever rehearsal or practice session they may wish to undertake. There is no MPP priority. Performance spaces such as the Miller Theatre and the Italian Academy were neither designed for Theatrical Performances or Concerts; furthermore, the programs of concern to us are given minimal (last priority) time in these spaces.
3. For the Theatre (MFA) and Film (MFA and Undergraduate) Programs in the School of the Arts, rehearsal, performance, and storage spaces are spread across buildings from 115th to 133rd street, which is at best highly inconvenient. Indeed, many of these spaces (typically standard classrooms, when available) are not at all well-suited to rehearsals for a variety of reasons.

C. The Committee's Response

The Committee plans at a later plenary to offer several recommendations to address this acute shortage from a variety of perspectives, including the building of an additional performance space, dedicated rehearsal space, and an improved electronic reservation system by which the existing practice rooms may be more efficiently managed. The resolutions will emphasize the following recommendations:

1. The creation of a new performance space with priority use to be given jointly to the Department of Music, the School of the Arts, and extracurricular student groups.
2. A reasonable and well considered recommendation for location of such a space.
3. That an electronic assignment system be established for music practice rooms and rehearsal rooms.
4. That the Administration be asked to initiate planning for a new Performing Arts venue and rehearsal support facilities on the Morningside Campus or adjacent to it.



Columbia University Retirement Program Enhancements & Participant Communication Plan

March 2022

Investment Advisory Committee (IAC)

- Formed by the Board of Trustees in 2012, the Investment Advisory Committee oversees the investment options and service providers (including their fee arrangements) in the University's **defined contribution retirement plans**
 - Current IAC members include EVP for Finance, VP for HR, Deputy Treasurer, and an IMC representative

- The IAC's key responsibilities include:
 - Reviewing the current service providers and investment menus;
 - Negotiating fee arrangements with the Plans' service providers;
 - Identifying opportunities to reduce participant fees; and
 - Benchmarking current circumstances to industry common and best practices

Strategic Review of Fund Offerings

- In the fall of 2018, the IAC initiated a strategic review of the existing investment menus at TIAA and Vanguard
- This project was initiated to achieve a number of objectives:
 1. Contain or reduce investment option expenses paid by participants
 2. Offer “best-in-class” investments and improve the participant experience through a streamlined investment structure
 3. Provide a diversified lineup readily understood by participants, without asset class overlap
 4. Provide flexibility for participants

The IAC engaged the services of Aon Investments USA Inc., a third-party independent consultant and fiduciary advisor, to help manage the strategic review process



New Plan Offering/Structure

What's Not Changing

1. **Our philosophy:** Employees' financial wellbeing – now and in retirement – remains a top priority for the University and the IAC

2. **Existing plan design:** The existing design of the Columbia University Retirement Program will not be changing
 - **Features including the number and types of plans, the University's contribution structure, and eligibility requirements will remain the same**

2. **Number of Recordkeepers:** At this time, both TIAA and Vanguard will continue to provide administrative recordkeeping services and be open for future contributions
 - Help desk, one-on-one advice sessions, and specially trained phone representatives will be available before, during, and after the transition to assist participants with questions and any investment decisions

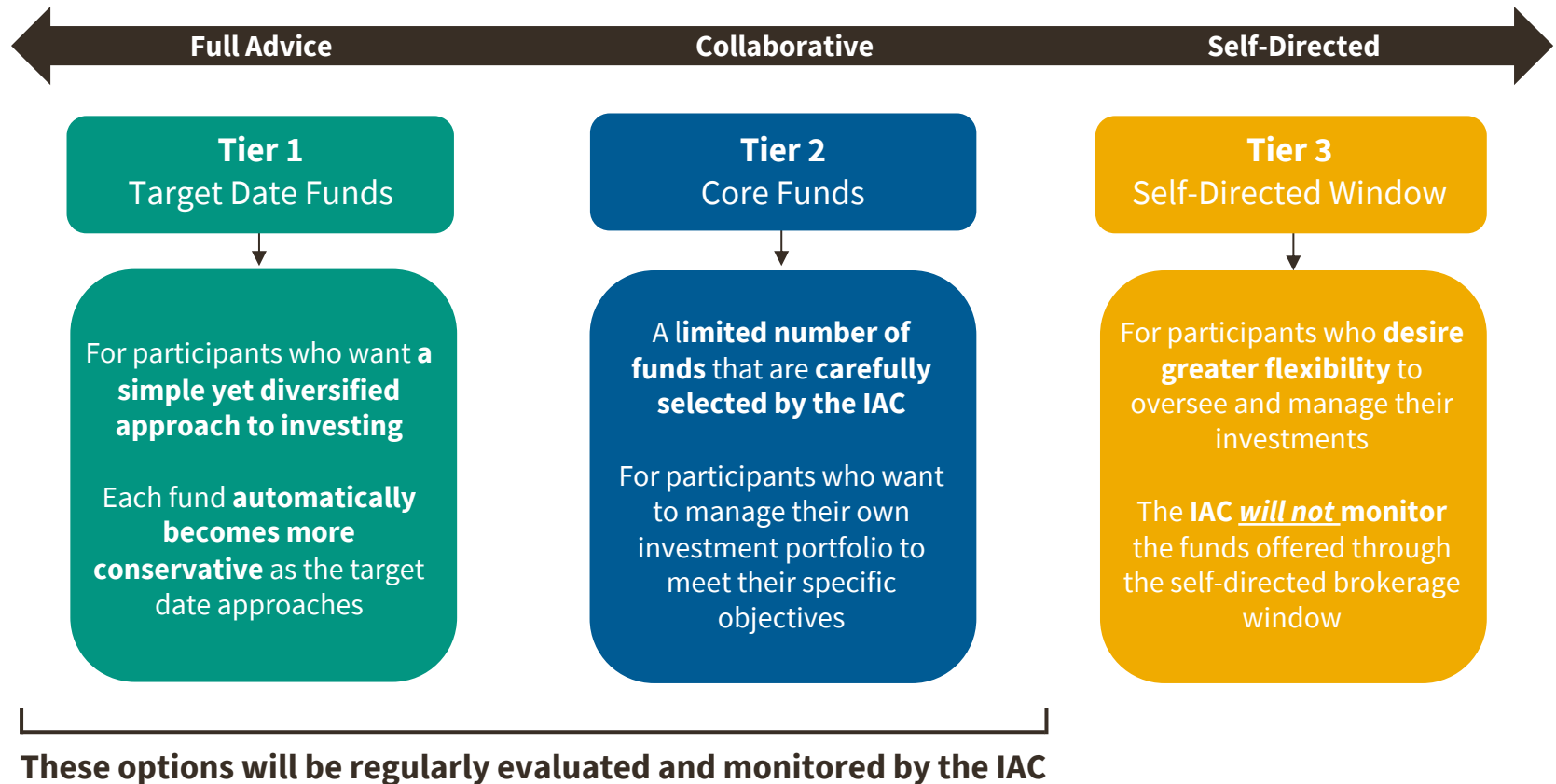
Key Elements in Our New Offering

1. A new, tiered investment lineup will make it easier for participants to select the investment option(s) that best match their investment knowledge and preferred level of engagement
 - **Tier 1**: Target date funds that make investing simple, as the asset allocation changes over time and becomes more conservative as a participant nears the target date, or retirement date (currently, this is the default investment alternative for our plans)
 - **Tier 2**: A carefully selected mix of investments to choose from that allow participants to construct well-diversified portfolios
 - **Tier 3**: A self-directed brokerage window that gives participants even more control and flexibility over their investment strategy
2. Mapping of existing assets and all future contributions to the new, tiered investment lineup if a participant makes no affirmative investment election¹
3. Allowing participants to make a **one-time** election to transfer identified mutual fund balances “in-kind” into the self-directed brokerage window during an “early-choice” brokerage election window

¹ Certain legacy assets with TIAA cannot be mapped because they are invested pursuant to a contract between TIAA and the participant.

Tiered Investment Structure

- Investments will be offered to satisfy three different approaches to decision-making
- Participants can invest in funds from any of the following tiers:





Participant Communications and Timeline

Participant Communications and Timeline

3/7/2022	3/9/2022 – 3/29/2022	4/1/2022	4/8/2022 – 5/24/2022	4/1/2022 – 5/25/2022	6/1/2022
<ul style="list-style-type: none"> •Email announcement of streamlined investment options to all plan participants •Transition Guide mailing will be posted to the CUHR Retirement website 	<ul style="list-style-type: none"> •Education Sessions conducted by TIAA and Vanguard will focus on retirement planning, diversification and annuities. 	<ul style="list-style-type: none"> •Transition Guide Mailing •Sender: TIAA/Vanguard 	<ul style="list-style-type: none"> •Investment Change Webinars conducted by TIAA and Vanguard 	<ul style="list-style-type: none"> •Brokerage Window Open Election Period •Participants who enroll into brokerage window during this period will have their non-core mutual fund assets transferred in-kind to the brokerage account on 6/1/2022 	<ul style="list-style-type: none"> •Implementation Date •TIAA and Vanguard will provide confirmation to CU that the changes have been completed as agreed upon

- Additional presentations will be made to the CUHR Network and the CUIMCHR Network in March
- Schools will have an opportunity to receive presentations at their request to discuss the fund lineup changes

Education Sessions and Investment Change Webinars

- TIAA and Vanguard will be conducting education sessions for participants.
 - The March sessions will focus on investments, saving for retirement, diversification, and annuities (TIAA only)
 - The April and May sessions will focus on the announced fund lineup changes

TIAA Education Sessions:

- **Wed., 3/10 – Financial Essentials**
 - 10am, 1pm, 4pm
- **Wed., 3/16 – Annuities**
 - 10am, 1pm, 4pm
- **Thurs., 3/31 Annuities**
 - 10am, 1pm, 4pm)

TIAA Investment Change Webinars:

- Mon., 4/4 (10am, 1pm, 4pm)
- Tues., 4/12 (10am, 1pm, 4pm)
- Wed., 4/20 (10am, 1pm, 4pm)
- Wed., 5/4 (10am, 1pm, 4pm)
- Thurs., 5/12 (10am, 1pm, 4pm)
- Tues., 5/24 (10am, 1pm, 4pm)

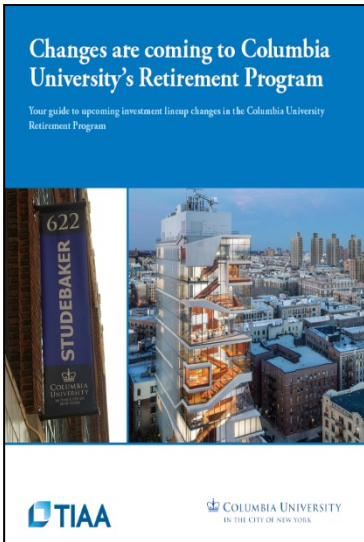
Vanguard Education Sessions:

- **Mon., 3/14 – Create your Plan**
 - 10am, 1pm, 4pm
- **Tues., 3/22 – Principles of Investing**
 - 10am, 1pm, 4pm
- **Tues., 3/29 – Create your Plan**
 - 10am, 1pm, 4pm)

Vanguard Investment Change Webinars:

- Mon., 4/11 (10am, 1pm, 4pm)
- Fri., 4/22 (10am, 1pm, 4pm)
- Mon., 4/25 (0 am, 1pm, 4pm)
- Fri., 5/13 (10am, 1pm, 4pm)
- Mon., 5/16 (10am, 1pm, 4pm)
- Mon., 5/23 (10am, 1pm, 4pm)

Key Communication Pieces



Dear Colleague:

The University is committed to providing retirement programs to help you plan for the future and provide a foundation of retirement income in addition to your personal savings and investments. The University periodically reviews the services and fees of our retirement program vendors, TIAA and Vanguard. In addition, in 2018 the University Investment Advisory Committee began a strategic project to re-evaluate the University's retirement savings program. As a result of that review, the Committee has decided to make changes to the Plans' investment lineup. These changes will further reduce fees and expenses paid by participants and will modernize the Plans' investment menu.

CUHR Benefits Email Notice

What is changing

Effective June 1, 2022, the University is streamlining the investment options available through the Plans. **You are not required to take any action and the University's contribution structure is not changing. However, existing balances and future contributions may be impacted. Please review the [Transition Experience](#) section of the Benefits Website.**

What is not changing

The key aspects of the Retirement Plans will remain the same:

- The University's contribution structure is not changing
- The Plans' designs are not changing—including the number and types of plans, and the eligibility requirements
- TIAA and Vanguard will continue to provide the administrative recordkeeping services and be open for ongoing contributions

What are the new investment options

The new investment options will be arranged into three tiers, providing you flexibility and a variety of choices to help you create a diversified retirement portfolio. The streamlined investment lineup also means that some funds are being closed and will no longer be available in the new lineup. In addition, if you are on the Vanguard platform for recordkeeping, some of the funds that are being closed are no longer open to new investors (e.g., Vanguard PRIMECAP Fund). If you would like to remain invested or continue to contribute to a fund that will no longer be available in the Plans under the TIAA or Vanguard recordkeeping platforms, you must open a self-directed brokerage account during the "early choice" brokerage election window. Otherwise, balances in a fund that is being closed will be liquidated on [insert Date], and that fund will no longer be available to you. Be sure to review the detailed information provided to you through Vanguard and/or TIAA.

The Plans' investment options continue to offer you the flexibility to create a retirement portfolio that meets your investment preferences and goals. Your investment options are grouped into three tiers:

- Tier 1: Target-date funds:** Target-date funds are professionally managed investments funds designed to create a diversified portfolio within one fund, based on your expected retirement year.
- Tier 2: Core funds:** Provides a set of investment options, selected by the University Investment Advisory Committee, designed to help you build your own diversified investment portfolio.
- Tier 3: Self-directed brokerage account:** Available for those who are more engaged investors who want to invest in a wide range of mutual funds outside of the Plans' investment lineup through an independent brokerage firm. Neither Columbia University nor the Investment Advisory Committee monitors the investments offered through a self-directed brokerage account.

How do I learn more

The Investment Advisory Committee, Vanguard, and TIAA have designed a program of webinars and one-on-one consultation sessions to provide more information.

Webinars: Current employees may want to attend a 60-minute Webinar to learn more:

- Vanguard offers 9 Webinar sessions. To select the date/time that works best for you and register go to the [Vanguard website](#).
- TIAA offers 12 Webinar sessions. To select the date/time that works best for you and register go to the [TIAA website](#).

One-on-one consultation: As a Plan participant, you have access to personalized advice on the Plans' investment options at no additional cost to you. To sign up for a 1:1 session:

- Vanguard: Go to [metvanguard.com](#)
 - TIAA: Go to [TIAA.org/schedulenow](#) or call 1-800-732-8353 weekdays, 8:00 a.m. – 8:00 p.m.
- Online Tools and Resources:** Both Vanguard and TIAA offer information, tools and calculators online
- Vanguard: [vanguard.com/tools](#)
 - TIAA: [TIAA.org/tools](#)

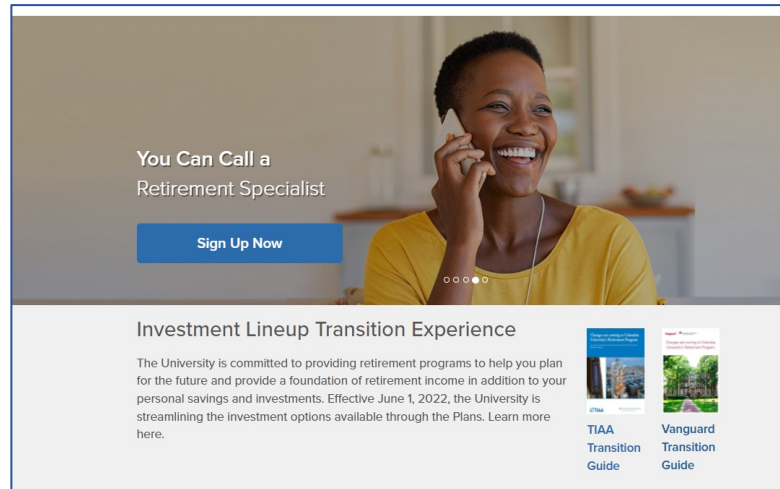
Columbia University Benefits: The [Retirement Savings and Financial Planning website](#) provides information and resources to help you understand your Plan options. The site also provides links to both Vanguard and TIAA resources.

If you have questions about your benefits, contact the Columbia Benefits Service Center by phone: 212-851-7000, or email: hrbenefits@columbia.edu.

Sincerely,

Michael Bloom
Associate Vice President, Benefits and Compensation
Columbia University Human Resources

Both Vanguard & TIAA's transition guide will be mailed to all participants* on April 1, 2022



CUHR Retirement Website is being updated with a section for information on the transition, along with links to register for the various sessions

Recorded sessions will also be posted

HR Network Meetings in March



March 4, 2022

Comments on the Revised Retirement Plan

Eli Noam
Chair, Budget Committee
Professor of Economics and Finance, and Garrett
Professor of Public Policy and Business Responsibility

1

- Thanks to the the University's team: Anne Sullivan, Dan Driscoll, Mike Bloom, and Gisele Monroe, and to the consultants from Aon.
- And a grateful farewell to the Budget Committee's long-time chair, Soulaymane Kachani, who has left the Senate upon his appointment as Senior Vice Provost.
- And thanks to my colleagues on the Budget Committee and Benefits Subcommittee for their active participation in the process through numerous meetings, discussions, and analyses.

2

I. Why this is important for the Senate
II. The new system
III. Next

3

- “Retirement plan” sounds like something for old-timers.
- But if this was called “tax-advantaged income, savings, and investments,” younger people might appreciate its value to them.
- Younger employees have actually many more years in which their benefits can accumulate and grow.
- And because it affects many faculty and staff decisions on whether to work for Columbia and for how long, whether they can afford to leave the job and make room for younger folks, it affects students, too, and young faculty.

4

- For a large portion of Columbia employees, for better or worse, it constitutes a major part of their savings.
- These savings are also quite huge in the aggregate, \$9-10 bil.
- It is the collective nest egg of the faculty and every officer employee.

5

- The impact of good management is huge.
- A back-of-the envelope calculation: Take as an example an employee with an annual contribution by Columbia of \$20K, a voluntary contribution of \$16K, and a 35-year period of employment at Columbia or other academic institutions, and a return of 5% on investments.
- (These are pretty reasonable assumptions.)

6

- The *difference* that just an extra 0.5% return per year would make for that officer (due to higher performing funds, lower fees, or both) would be **\$418,673** at retirement.
- An *extra* **\$4,167** each month in retirement (over 15 ys)
- If we change the assumptions somewhat, and one works for Columbia and other universities for 40 ys, and contributes the Federal max of about 20K, then the difference would be **\$762,000**.

7

- Another way of looking at this: If we apply the 0.5% of difference in annual return to the entire plan value of currently approximately \$10 bil, (and ignore net inflows [contributions]) and outflows [payments] that are likely to still increase the effect), the impact would be, after 30 years, an extra \$5.62 billion, more than half of the entire current balance.

8

- It is therefore essential that we at the University Senate, as representatives of our various constituencies, assure that this system works optimally.
- The financial flows, cost elements, and investment performance of the system as a whole are not very transparent. It requires a knowledge and attention that none of us has.
- We just assume that things are ok.

9

- That assumption was challenged a year ago when Columbia settled a class-action lawsuit concerning the management of the retirement.
- It agreed to pay \$13 mil instead of going to court.

10

- In fairness, just about every university in the country was being sued. But that doesn't necessarily mean that the plaintiffs don't have a case. The fact is that the management of these retirement plans had become a sleepy backwater at many universities . After all, it wasn't the universities' money.

11

- Take a look at what a, a highly respected Federal judge wrote in her decision about NYU, her own alma mater, where she was also an adjunct professor.

12

-v-
NEW YORK UNIVERSITY,
Defendant.

KATHERINE B. FORREST, District Judge:

- “...Five current and former Committee [NYU’s investment plan] members testified at trial: ...”
- “...[Margaret] Meagher...(co-chair); ... she displayed a surprising lack of in-depth knowledge concerning the financial aspects of managing a multi-billion-dollar pension portfolio and a lack of true appreciation for the significance of her role as a fiduciary...”

13

-“Meagher’s supervisor, [Nancy] Sanchez, also a Committee member, was similarly unfamiliar with basic concepts relating to the Plans, such as who fulfilled the role of administrator for the Faculty Plan. When asked about her inability to remember Plan details, Sanchez responded that she has a “big job”...and that her role on the Committee is one of many responsibilities she has. ...”

14

- “Martin Dorph... testified that he did not even know whether he was...still a member of the Committee—and thus whether he bore a fiduciary responsibility to thousands of NYU participants. ...After the Court questioned how he could be unaware of his membership status, he endeavored to learn;”
- “Dorph, who is now Executive Vice President at NYU, previously served as NYU’s Senior Vice President for Finance and Budget... He testified that he “had a very busy schedule” and that he “didn’t review all of the materials,” but did so only on occasion.”

15

- So these were the busy people who supervised the NYU plan.
- And remember, what difference it makes to have just one half of one percent in stronger performance. Which requires management attention.

16

- I am not suggesting at all that the University is managing our retirement funds improperly.
- I have full confidence in the competence of the team led by Anne Sullivan’s.
- Nor is this a zero-sum game in which the University as employer somehow gains at the expense of its employees.
- But the numbers are so large that they merit the Senate’s constant attention and review, too.
- At a minimum, we should strengthen accountability and transparency, which is always a good thing.

17

- For example, the Calvert International Equity Fund has been one of the very few options for international diversification options in the TIAA lineup.
- That fund charges 1.39% annual management fee, which is pretty stiff.
- Several other major actively managed international funds charge less (Vanguard 0.44%; Fidelity .65% and 0.1%).
- Index funds (i.e. not actively managed) for international equity are even cheaper (Fidelity 0.035%; Schwab 0.06%, Vanguard 0.07%.)

18

- Calvert charges thus 40 times as much as a Fidelity index fund. But is this justified by stronger performance?
- Not so. Morningstar investor data service data shows that this Calvert fund has performed below the international equity index, and below comparable funds. It gets an anemic two stars rating.

19

- The university administration has legal fiduciary obligations for these almost 10 bil and these thousands of employees.
- But we as the Senate have also a moral obligation to be fiduciaries of our constituencies.

20

What the Senate Budget Committee did

21

- September 2021: started a review of the system, based on problems we perceived
- November: held hearings with a panel of outside experts. For many, this was an eye-opener
 - Subsequently, questions sent to IAC
- December: the IAC presented us with its draft proposal of a new system, on which it had been working
 - We identified several issues, questions sent to IAC
- January: 2nd meeting with the IAC.
- February: the IAC modified its plan in several ways
- Last night, the Budget Committee met and reviewed this modified plan

22

Some of the issues we probed with the expert panel

- Selection of investment options and the review of their performance
- revenue sharing of recordkeepers with 3rd party investment funds
- Setting of administrative fees paid to administrators/recordkeepers;
- Setting of fees of management fees paid to fund managers;
- Supervision of plans by University's Investment Advisory Committee
- The relationship with its consultant Aon
- Best practice models at other institutions

23

- I. Why this is important for the Senate
- II. The new system
- III. Next

24

- Bottom line of our evaluation of the revised plan:
 - Improvement over the previous plan, and over the first draft of the revisions
 - Improvement in the consultation process
 - Concerns about the ability to communicate and implement the plan
 - Several specific concerns that need to be addressed in the near future
 - Need for the Senate to generate expertise

25

1. The Plan Operators

26

- We agree with giving Vanguard a key role
 - Reputable and low cost
 - However, concern with its triple role:
 - Operator of half of the system ("record keeper")
 - Investment advisor to beneficiaries
 - Vendor of investment funds (some of which are funds of still other Vanguard funds)
 - We want to be assured that a Vanguard advisor will in fact and not just in theory be able to tell a Columbia investor to stay away from a particular Vanguard fund if that fund performs poorly

27

- TIAA
 - This is also a problem with TIAA.
 - Traditional and reputable mainstay of Columbia plan
 - But it's not a non-profit company anymore.
 - Recently, it had to pay \$100 mil in restitution to clients for conflicts of interest in advising.
 - Also, its main business are annuities, very complex and non-transparent

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- Essential, going forward:
 - no lock-in with a particular service provider
 - easy shift to other record keepers and fund families in the future
 - RFPs issued periodically for Columbia's business

29

2. Tier 1---TDFs (Target Date Funds)

30

- Tier 1 is for low-involvement investors.
- It is based on TDFs, which are funds that in turn own other funds, and they get more conservative (i.e., with more bonds and less stocks) as one gets older.

31

- TDFs are Columbia's default plan.
- If you don't pick funds, that's where your money goes, automatically
- If you don't switch existing funds into the new approved funds, TDFs is where your money goes, automatically

32

- We agree that TDFs are an important option for many passive Columbia faculty and others
- But it is essential to provide them with information about just how costly such passivity is for them.
- And how little it does for that cost

33

- First problem: many people imagine that for these TDF funds, being "professionally managed" means that there is an army of little Warren Buffets and other Columbia MBAs ceaselessly working to make you money.
- Nothing would be further from the truth.

34

- Vanguard TDFs are simply 5 other very basic Vanguard funds (domestic and international stocks and bonds), with the proportion of stocks dropping automatically every few years.
- You could do that, too. All of these 5 funds are part of your Tier-2 options. It would take you an hour every 5 years.
- It's like prix fixe versus a la carte at a restaurant. Why would you possibly pay more for the identical meal on a prix fixe basis? We've calculated and concluded that with the Vanguard TDF, you end up paying double the fees over what you would if instead you did it yourselves a la carte, instead of the prix fixe of Vanguard.
- That's perhaps several hundred dollars a year, depending on the size of your holding. But that's the least of it.

35

- Because on top of that, that prix fixe has no variations. It's one size fits all. The restaurant doesn't care if you are a vegetarian or are very hungry. The TDF does not consider the numerous variations in people's financial and personal circumstances such as other assets, nothing except for years to a hypothesized retirement date. This means a sub-optimal allocation.
- And on top of that, most finance scholars consider TDFs to be too conservative (bond-heavy) to begin with.
- And other finance research has shown that TDFs, when being limited to just one family of underlying funds, reduce return by over ½ of a percentage point

36

- Speaking of fees: we are, of course, happy that the Vanguard fees are low, at 8 points. That said, we also notice that such a rate is available to anyone walking off the street with \$2,000 to spare.
- We believe that the IAC, possibly with other universities, should negotiate with Vanguard to set an institutional tier with a lower minimum aggregate dollar amount than presently offered.
- If it is not possible to get an institutional rate, Columbia should seek, going forward, alternative bids for its TDF business.

37

- TDF marketers tout their simplicity. Everybody likes simplicity in the abstract. But its value depends on its cost.
- Suppose that this proposition was put to a Columbia Officer: you can either pick among about 14 index funds. Or, you can put all of your contribution money each year into a TDF .

38

- However, that service will cost you a lot, applying the conclusions of finance researchers cited below in a 'back-of-the-envelope' way. Over your 35 years of employment in academia, it would add to about \$630,000 in lower retirement savings.
- And also, according to other researchers, the inflexibility of the TDF to account for individual circumstances beyond age, and the lack of investor attention and fund manager incentives, would reduce your annual welfare, as a percentage of consumption, by 1.7-2.8%, which, if invested instead, would accumulate to \$228,000 that you will thus forgo.
- So what will you choose?

39

- **Please note: These are extremely simplified back-of-the-envelope calculations, for sure, and all they should demonstrate is that the numbers can be very high.**
- [Assumptions: Maximum defined-contributions by employer (\$20,500/yr) plus same amount in voluntary contributions. Above 50 yrs of age, an additional \$6,500 for each.
- Sources:
- https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3729750. That paper finds a 21% reduction in returns over 50 years, partly due to performance of funds with low attention by investors, partly due to limited fund investment choices, and partly due to management. We prorate this for 35 years.
- Assuming a return of 5% for non-TDF index funds.
- <https://www.nber.org/papers/w29559> finds negative impact on consumer welfare in terms of consumption.
- The several reductions in performance might be partly overlapping.

40

- The conclusion is that **our colleagues deserve to be told clearly that the simplicity of TDFs comes with a non-trivial price.** They can then make up their own minds.
- We should not infantilize Columbia officers when it comes to their personal finances.
- These are people who run their bank accounts, take out mortgages, manage people, deal with information, conduct research, use computers, instruct others, etc.

41

- If given enough information, they can make up their own mind whether they want to become more active, or whether they want to put their money into a TDF and pay. A meaningful and dis-interested mechanism of financial advising is hence essential.
- The two recordkeepers for Columbia – Vanguard and TIAA—provide fairly basic advising services as part of their function as recordkeepers, and sell better investment advice separately, for a price of 0.7-1% of total assets of portfolios up to \$1 million. They also sell their own investment products, an issue that has long been controversial.

42

This gets to the question of alternatives to TDFs (a slight detour for the perplexed)

43

- Self-selection.* Given how much the number of Tier-2 funds has been reduced and simplified to 14 basic funds, this is now becoming a manageable option, and it should be encouraged.
- Don't act your age,* and instead self-select among the various vintages of the TDFs. There is nothing that requires officers to follow the TDF that matches their retirement age. Those officers who wish a somewhat more (or less) aggressive portfolio based on their assessment of economic conditions or based on their individual circumstances and other assets, should be clearly told in the information provided to all that they can at any time move to the TDFs of younger, or older, cohorts.

44

–*An investment dashboard.* Even in their terms of aiming at an age-based portfolio composition, the TDFs are meaningless as soon as the officer has also other investments, both inside and outside the plan. Therefore, officers should be able to judge the riskiness of their portfolio in totality. Private brokerages such as Charles Schwab proved their clients with dashboards encompassing all of their investments, whether at Schwab or elsewhere, and offer summaries on how risky their overall composition is. The same should be asked for the two Columbia recordkeepers, Vanguard and TIAA. This would enable the officers to adjust that overall riskiness to the level they prefer.

45

3. Tier 2: 14 Investment Funds

46

- Tier 2** is for moderately active investors.
- It provides us with a menu of 14 fairly generic Vanguard funds, down from about 85. This makes choices easier by reducing the over-abundance of options.
- Most important, these funds are the much cheaper index funds.

47

- We agree with the reduction of fund options to a more manageable number of basic options
 - Supported by academic literature of finance and behavioral economics
 - Eliminated many of the earlier pricey funds
 - At our urging, the IAC restored the option of a SEG fund (socially, environmentally, and governance-responsible). Currently, there are 4,370 Columbia participants in such a fund, 3rd highest of all funds. The fund was going to be eliminated due to some complicated Washington regulatory issues that are pending.
 - And the IAC also added, at our urging, an international bond fund

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Looking ahead:

- Need flexibility in the future to add and subtract funds to the 14 options
 - For example, actively managed funds
- And in particular, the performance of these existing funds needs to be monitored. Disappointing performers should be replaced. Reputable lower-fee rivals should be considered. And if necessary, they should be replaced by non-Vanguard funds or fund family.

49

4. Tier 3 -- the self-directed brokerage account option

50

- **Tier 3** is for the most active investors. It provides a "user-directed" investment relationship with Vanguard or TIAA as a broker, in which the plan participant can transition any of their existing funds.
- Whereas in the past they had to choose how to invest in 85 funds, now the blue sky is the limit, they can pick just about any investment fund. The risk is on them.

51

Issues:

- The fees payable by the participant, for already existing investments, are raised from the Columbia-based institutional rate to the higher retail rate. Why should they not be grandfathered? After all, the employee has done nothing to change. TIAA will accommodate this problem, but not Vanguard.

52

- Also, the entire budget committee is not entirely clear on some aspects of this arrangement, and we will seek further clarifications.

53

5. The Missing Tier: Annuities

54

–Left out of the proposed revisions and improvements to the plan is a huge part of the existing system, namely TIAA’s “Traditional” annuities.

- 3.2 billion dollars, about one-third of the total Columbia plan’s invested funds.
- It is by far the largest of the investment choices.

55

–At the same time, it is a hugely complex system with multiple dimensions and restrictions that are, in the aggregate, almost unintelligible to most employees.

- Also, its cost are left undisclosed, in contrast to the other options.
- This is not to say that the annuities are a poor investment or that TIAA takes advantage of the participants.
- But for many people it is a non-transparent investment they enter into partly based on trust in what they incorrectly believe is still a non-profit organization.
- We need much more transparency here.

56

6. Implementation

57

–Positive: at our urging, the IAC stretched the time for roll-out

- Important to assure enough advisory capacity for peak period
 - Realistically, most people will focus on this only close to the deadline, and will try to make major financial decisions at the last minute.
- Need to provide full information on advantages and also on the drawbacks of options

58

- I. Why this is important for the Senate
- II. The new system
- III. Next

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- 1. Hold a Town Hall meeting to inform and get feedback from the Columbia community
- 2. Maintain ongoing conversations with the IAC
 - Moving from the “Briefing Model” to the “Consultation Model”
- 3. Participate in review of the retirement annuities (>\$3 bil) that are outside the new plan
- 4. Assure that Columbia participants get full and clear information.
- 5. To help us in these conversations, organize access for the Senate to financial plan experts (on-campus and outside)

60

- This is good for all of us as beneficiaries
- It's also good also for Columbia the institution.
- There is a legal industry out there just waiting to bring more lawsuits for the violation of some fiduciary obligations.
- And if Columbia's IAC can show that it has cooperated with the beneficiaries, through the University Senate, it would be in a strong position.

61

A system that manages the options for our money as a top-down black box is the past. In the future, the Senate should be engaged.

62

- The Budget Committee is looking forward to your comments and feedback.
- Thank you for your attention.

63