

University Senate Plenary

February 19, 2021



University Senate

Proposed: February 19, 2021

Adopted: February 19, 2021

PROPOSED AGENDA

University Senate

Friday, February 19, 2021 at 1:15 p.m.

[Registration required](#)

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

1. Adoption of the agenda
2. Adoption of the minutes of January 29, 2021
3. President's report
4. Executive Committee Chair's report:
 - a. Travel policy
 - b. Commencement 2021
5. New business:
 - a. Committee reports and updates:
 - i. Supporting Caregivers during and following the COVID-19 Crisis: Suggestions for Immediate Response (Commission on the Status of Women)
 - ii. The need for a more stringent testing regime (Research Officers Committee, Commission on the Status of Women, and Student Affairs Committee)

MEETING OF JANUARY 29, 2021

In the absence of President Lee Bollinger, Executive Committee chair Jeanine D'Armiento (Ten., VP&S) called the Senate to order at 1:15 pm on Zoom. Seventy-nine of 101 senators were present during the meeting.

Chair's preliminary remarks. Sen. D'Armiento welcomed senators to the first meeting of the spring semester. She said there was a new sense of optimism, because of the arrival of the vaccine and the recent positive change in the government. But the pandemic was still surging, and it was sometimes difficult to see the light at the end of the tunnel. Students were longing for the end of Zoom classes, and professors were eager to see students and staff in person. She said the pandemic will end, and she appealed for patience.

Sen. D'Armiento said the Senate would be hearing later in the meeting from two speakers about progress in vaccinations and the arrival of more students on campus for the spring term. She hoped to hear from the speakers that declining numbers of cases would make it possible to increase in-person interaction in the months to come. In the meantime, she encouraged senators to make whatever virtual connections they could.

Sen. D'Armiento reminded the audience that only senators can vote at plenaries, and non-senators have limited speaking privileges.

She also noted that Zoom had changed its formatting since the last meeting, and the only way to vote now was to use the hand icon. She said she would explain the procedure in more detail before the next vote, which would not likely take place in the present meeting.

Adoption of the agenda. The [agenda](#) was adopted as proposed (January 29 Plenary Binder, page 2).

Adoption of the minutes. The [minutes](#) of December 11, 2020 were adopted as proposed (Binder, pages 3-7).

Executive Committee Chair's report. Sen. D'Armiento invited senators who had questions for the president to email them to her, and she would forward them.

- *Covid-19 and vaccines update*: Dr. Wafaa El-Sadr, University Professor. Prof. El-Sadr gave a [slide presentation](#), “The Race Between the Virus and the Vaccines” (Binder, 8-47). Discussion was postponed till the end of the second presentation.

- *Return to campus*: Dr. Melanie Bernitz, Senior Vice President for Columbia Health. Dr. Bernitz gave a [slide presentation](#) on the return to campus for the spring semester (Binder, 48-61).

Discussion. Sen. Henry Ginsberg said that given the emergence of variant forms of Covid, and the possibility that people might need to renew their vaccinations at regular intervals (as with the flu but for a much more lethal disease), do people face a future of wearing masks and social distancing for the rest of their lives? He said such a prospect seemed impossible for the population to deal with. He apologized for his pessimistic tone.

Prof. El-Sadr said this was an important issue. She said it might become necessary to tailor vaccines each year to the latest variants that have emerged, as with the flu. The good news was that such fine-tuning of vaccines could be accomplished simply and fairly rapidly. If such a vaccination program could reduce transmission of the disease, the risk of variant strains might also be reduced. Another favorable development was that, as with the flu, there wouldn't have to be efficacy studies of vaccines every year.

Sen. D'Armiento, relaying a question from the Chat, asked whether Columbia people would be provided with N-95 masks and other better equipment.

Prof. El-Sadr said N-95s are recommended for healthcare workers who face patients. But she could say from personal experience that they are not comfortable to wear. She said there were no data so far to support or refute recommendations to wear two masks at a time.

Dr. Bernitz added that the primary concern—ahead of using N-95s—is correct use of masks, making sure they cover the nose and chin.

Sen. Ann Thornton (Admin.) asked what enforcement guidelines to apply when people—particularly students—are wearing such a wide variety of facial coverings.

Prof. El-Sadr outlined two key requirements: cloth masks should have two layers and should fit snugly over the nose and chin.

Sen. Mignon Moore (Ten., Barnard), who is African-American, said black colleagues who are health professionals have reported success in their efforts to reassure other black people about the importance and safety of getting the vaccine. She appreciated Prof. El-Sadr's point that suspicion can be found in people of all backgrounds. But it is persistent in the black and Hispanic

communities. She said her colleagues' experience shows the value of matching people with experts from similar ethnic or racial backgrounds.

Prof. El-Sadr agreed strongly, saying that wariness of vaccines can be based on deep beliefs, and sometimes historical experience. She had encountered similar responses—and success stories—with HIV education efforts.

Dr. Bernitz thanked Sen. Moore for her comments. She said that as the University develops its messaging for its own vaccination efforts, it would account for those lessons for all Columbia constituencies—students, faculty, and staff.

Sen. Ramsey Eyre (Stu., CC) said a common question among students is, Why isn't testing mandatory for all students accessing campus? Why is surveillance testing enough?

Dr. Bernitz said there are different testing regimes for different groups. Students living in dorms this term were now getting mandatory twice-weekly testing. Other students, after getting their Gateway test, may choose weekly testing, and there has been a sharp uptick in that program. The idea was to start with these steps, to monitor the situation closely for clusters, and to react nimbly to any significant changes in the numbers by adjusting the frequency of the testing. There is active contact tracing with each positive case. None have arisen in classroom situations. The problem is usually social gatherings, and occasionally the workplace.

Sen. Alden Bush (Stu., Nursing) thanked both speakers and appreciated Sen. Moore's comments, noting that he was volunteering at the Armory as an R.N. vaccine administrator and was finding that people coming for the shot were reassured to be dealing with a native Spanish speaker. He asked whether there would be a move away at some point from the Pfizer and Moderna vaccines, which (along from their impressive efficacy) are difficult to produce and to store, and toward possibly less effective vaccines that are easier to distribute and administer.

Prof. El-Sadr shared Sen. Bush's concern about vaccines that are difficult to use in remote parts of the world, including some sections of the U.S. She anticipated that a balance would be found over the next year or two between efficacy and feasibility for vaccines in different settings.

Sen. Ian Beilin (Libraries) asked how herd immunity could be achieved if it may still be possible, even after getting the vaccine, to catch the virus and pass it on.

Prof. El-Sadr said there was suggestive but not definitive evidence that the new vaccines prevent not only *disease* (symptomatic Covid) but also *infection* (asymptomatic Covid). Studies of the AstraZeneca and Moderna vaccines (based on limited data) and of large-scale vaccination efforts in Israel provide encouraging news. Prof. El-Sadr said early modeling suggests that highly effective vaccines, with strong coverage of a population, may help achieve herd immunity even

if they cannot completely prevent asymptomatic infection, partly because people with active disease shed higher viral loads that are more likely to spread.

Sen. D'Armiento underscored the point that getting the vaccine does not eliminate the need for any of the other precautions people have relied on to reduce transmission.

Sen. Steven Corsello (Stu., GSAPP) followed up on Sen. Eyre's previous question by asking how many students were now accessing Columbia's campuses without getting regularly tested.

Dr. Bernitz said that on January 25, when the Reopen app was turned on for the spring semester, data showed that some 500 students had accessed campus during the previous three weeks without getting tested. After January 25, most people have either been tested or have a red signal on their apps. At this point, no one can get into a Columbia building without getting tested first.

Sen. D'Armiento followed up on Sen. Corsello's question to ask how many people are on campus every week without having recurrent Covid testing.

Dr. Bernitz said the total number of such people, including students, faculty, and staff, on all of Columbia's campuses, was about 5000 per week.

Sen. D'Armiento thanked Prof. El-Sadr and Dr. Bernitz for their presentations.

Annual reports.

Advisory Committee on Socially Responsible Investing: Annual Report for 2019-20 and 2020-21 (Bruce Usher, Professor of Professional Practice, Business School, and ACSRI Chair). Prof. Usher gave a [slide presentation](#) (Binder, 62-72).

Discussion. Sen. Cameron Clarke (Stu., VP&S) noted some differences between the recommendations on divestment of fossil fuels that the ACSRI had proposed last fall, on the one hand, and the Trustees' response to those recommendations on January 20, on the other. The ACSRI recommended discontinuing investment and not reinvesting in funds that primarily invest in fossil fuel companies, whether privately or publicly held. The Trustees' response was that Columbia will not make *new* investments in funds that primarily invest in *privately held* fossil fuel companies. How significant were these differences?

Prof. Usher appreciated the question. He said the idea of divestment is to withhold support from any company or fund that is not aligned with the University's values. But figuring out which companies or funds belong on which side of that question can be complex. Prof. Usher said he did not have the answer to Sen. Clarke's question about differences in the treatment of public and private funds. His understanding was that Columbia was not now invested in public oil and gas funds. Investing in public funds would be an odd strategy, he said. Most oil and gas

investments are directed at privately held companies. The key question, then, is about Columbia's future approach to private oil and gas funds.

Sen. Clarke asked whether Columbia has any investments now in funds that invest primarily in oil and gas companies.

Prof. Usher said he could not say definitively. He did not know what the significance might be to the differences in language. He said that when the ACSRI started working on its recommendations, Columbia did have some direct investments in oil and gas companies. By the time the ACSRI issued its recommendations, those holdings were gone from the portfolio. And now, going forward, Columbia can no longer have direct holdings.

Sen. Clarke asked if it was correct to say that Prof. Usher was confident there were no more direct holdings in oil and gas companies in Columbia's portfolio, but not certain whether there were no holdings in oil and gas funds.

Prof. Usher said that was correct.

Sen. Eli Noam (Ten., Bus.) asked what principles are guiding the ACSRI's deliberations in this case. How should oil and gas companies be distinguished from, say, Coca-Cola, a product that causes obesity, or from a company that supports oil drilling, or from Apple, which avoids U.S. taxes, or from McDonald's, if its CEO were charged with sexual harassment? Are these judgments becoming a kind of popularity test?

Prof. Usher said the answer depends on the issue. In the case of greenhouse gases and climate change, much of the important data is available from the companies or from other sources. It's clear who the polluters are. The most challenging question, and the most important one in his view, is, Which companies are changing their business models and heading in the right direction? The Danish Oil and Gas Company began changing course 10 years ago, and now, with the new name Orsted, has become one of the world's major renewable energy companies, focusing on offshore wind production. Another company, Equinor, remains in oil and gas, but is halfway committed to renewable energy sources. It's clear what the ACSRI would now say about Orsted, but not so clear about Equinor. He added that most oil and gas companies are not seriously committed to addressing climate change.

As for the other social issues Sen. Noam had raised, Prof. Usher said some of them are hard to evaluate. The most challenging issue overall has been Columbia's divestment screen on Sudan, which was in place from 2007 until this year. When is business activity in Sudan supporting the citizenry and when is it supporting genocide?

Sen. Noam said Prof. Usher's account seemed to go beyond the familiar kind of ACSRI deliberation on what companies or industries to avoid to activities that the ACSRI should actively support, such as wind generation. Was that a new direction for the ACSRI—*recommending* certain investments?

Prof. Usher said the ACSRI does not have the authority to do that. Such decisions are up to the Columbia Investment Management Co. But with its policy recommendations on climate change, the ACSRI was encouraging the Trustees in a roundabout way to invest in companies that are now making the transition to net-zero goals by advising them not to pursue another kind of investing that fails to account for climate change.

Gordon Grant, a student in GSAS but not a senator or a member of a Senate committee, asked to speak. Most non-senators do not have speaking privileges at plenaries, and Sen. D'Armiento hesitated. Then parliamentarian Linda Mischel Eisner reminded her that senators could choose to suspend the rules and allow Mr. Grant to speak. Sen. Clarke moved to suspend the rules, and there was a second. Hearing no objection to the motion, Sen. D'Armiento allowed Mr. Grant to proceed.

He asked what kind of objective metrics can be used to determine whether oil and gas companies are really transitioning toward net-zero goals. Is it carbon credits generated? He said it's important to consider their record fairly without presuming either guilt or innocence.

Prof. Usher said Mr. Gordon had gotten to the heart of the issue: How to determine whether a company will get on a sustainable path to net-zero emissions by 2050. Prof. Usher expressed unease with the terminology of a presumption of guilt, but he said all oil and gas companies start out on a non-investment list because by the very nature of their business they are contributing to climate change. Now, however, huge amounts of data are being collected by a range of organizations to help determine whether a company is really transitioning. In many cases an assessment by the ACSRI will be inconclusive, in which case the company cannot be recommended for investment. When the determination is very clear-cut, as with a company like Orsted, the ACSRI will be able to make a positive recommendation.

Sen. Mike Ford (Stu., GSAS/Hum) asked whether, if the University were to decide to bring the 2050 net-zero deadline closer for its own sustainability goals, perhaps to 2035, it would also be able to shorten the timeline for fossil fuels companies?

Prof. Usher said he would be pleased to even contemplate such a prospect, let alone act on it. But he thought there was a more important priority for the University, which is mentioned in the last of the recent ACSRI recommendations to the Trustees. While fossil fuels are deservedly focused on as the largest single contributor to climate change, there are also other sectors of the economy that urgently need to be addressed, such as transportation (particularly airlines), cement, steel,

and agriculture, among others. Prof. Usher said these sectors should be the next focus in the University's commitment to socially responsible investing in connection with climate change.

Sen. D'Armiento thanked Prof. Usher for his presentation.

She adjourned the meeting at about 2:45 pm.

Respectfully submitted,

Tom Mathewson, Senate staff

University Senate Commission on the Status of Women

Supporting Caregivers during and following the COVID-19 Crisis: Suggestions for Immediate Response

Universities across the country are struggling during COVID-19 to keep their community members safe and supported. For the last seven months, the CU Senate Commission on the Status of Women, Commission on Diversity, and Student Affairs Committee have worked together to consider how to prioritize an equitable recovery that includes the full scope of our Columbia families. We understand that the University is motivated to support caregivers in the months ahead, knowing that such additional responsibilities have had an undue impact on academic, research, and administrative duties we carry. The subcommittee tasked with thinking through the most effective avenues for supporting caregivers offers the following recommendations. In making these recommendations our key considerations were interventions we believe would be most impactful while minimizing increased expenses.

First Priority:

1. **Subsidization of Childcare Expenses.** While childcare expenses are an ongoing issue for members of the Columbia community, COVID-19 has added new barriers to finding and using safe and available childcare. Closures, temporary, ongoing or unpredictable, of day care centers and schools have aggravated the demand for childcare far beyond those in a normal year. We recommend exploring two supports (one focused on faculty/staff/administrators and one on students):
 - a. Barnard* and Teachers College* have negotiated with Bright Horizons to include coverage for private care providers during the COVID-19 crisis. For many reasons (including a lack of availability of BH caregivers, concerns about the quality of BH's providers, and the need to minimize the number of providers in a home given virus transmission risks), we strongly recommend that Columbia does the same. We understand that expanding this benefit to everyone may not be fiscally possible and suggest that the University consider prioritizing those employees who make below a certain income if necessary.

- b. Subsidies for students who require childcare vary significantly across schools within the University. We recommend that the University provide a centrally managed pool of grant funds for which students can apply, modeled on [Cornell's need-based childcare grant program](#).
2. **Extending Tutoring and Support Programs for K-12 students.** Many of our families have school age children who have severely limited or no in-person instruction at their schools. This has meant that parents and guardians have had to supervise remote-schooling along with their own work responsibilities. We recommend the university develop, pay and manage a tutor corps available to any family that would like to use them. This would be an extension of the [tutoring program developed for the families of the medical school](#) over the spring and summer of 2020, with the added recommendation that such tutors should be paid and not be solely volunteer positions. Barnard College for instance has been able to [develop such a program](#) by using work study positions that they could otherwise not fill remotely. The University can also look to modifying and expanding its after-school community programs, school break and summer camp programs, and other community enrichment initiatives to directly engage this K-12 population that is facing severely limited educational and social opportunities through the COVID crisis.
3. **A Transparent Policy Supporting Parents in Key Educational/Career Moments.** Pre-tenure (and, to a lesser extent, pre-promotion) faculty, postdoctoral fellows, and students are all experiencing career interruptions during COVID-19. We recommend that the University commit to:
 - a. Placing formal letters in faculty and fellow files noting any possible career impacts from COVID-19, including but not limited to delays in publication, funding, and/or data collection as well as noting reduced opportunities for networking that may impact external letter responses.
 - b. Transcript notifications for students for any semesters impacted by COVID-19 (including, to date, Spring, Summer, and Fall 2020, and Spring 2021.
4. **Guidance for Managers, Leaders, and Faculty About Supporting Flexibility.** While there are countless cases of individual managers and faculty providing understanding and flexibility during COVID-19, there are also those who want to be supportive but do not know how. To that end, we recommend that the University:

- a. Develop and share widely a memo from HR for managers about how to support flexible work arrangements during this time, as well as how to promote asynchronous work (which, by virtue of being flexible, can allow caregivers to complete their work well when they are able to).
- b. Clarify for faculty and academic department staff allowable mechanisms for granting flexibility to students. In particular, adding dependent-care emergencies to the list of appropriate reasons to grant an excused absence from class would be helpful. Elective alternative grading policies have been well received and should, where possible, be continued throughout the crisis.

Second Priority:

5. **Dedicated student-parent support.** Supporting student parents will continue to be necessary for recruiting and retaining the best students. We suggest that the University consider funding a line in the Office of Work/Life that is dedicated to student parents. This relatively small investment could have an outsized impact on the experience of student parents and help connect them with resources, thereby decreasing student demands for additional internal funds.
6. **Improved data collection/capture.** Ascertaining what supports would be helpful for the community have been hampered by inconsistent and/or nonexistent data. Comprehensive data collection efforts (managed and maintained by the appropriate offices in order to maintain confidentiality) on work/life demands for faculty, staff, and students would ensure that the University is better positioned to meet such challenges head on in the future.
7. **Consideration regarding testing and vaccination for families and caretakers.** We recognize it is key for the safe return to work for our community members that all members of their families and immediate households have access to testing and vaccination. We ask that the university consider where it may be able to extend benefits it is already offering in this area to those on the same health insurance policy as the Columbia affiliate.

*please contact CSW members regarding specific Barnard (Shayoni Mitra) or Teachers College (Katie Conway) policies.

Supporting Caregivers during and following the COVID-19 Crisis: Suggestions for Immediate Response



Commission on the Status of Women in partnership with the
Commission on Diversity & Student Affairs Committee

The Importance of an Equitable Recovery from COVID-19

- Nationally, disparities in career and educational outcomes from COVID-19-related challenges are being documented, particularly for caregivers and particularly for women.
- We understand that the University is motivated to support caregivers in the months ahead, knowing that such additional responsibilities have had an undue impact on academic, research, and administrative duties we carry.
- The subcommittee tasked with thinking through the most effective avenues for supporting caregivers offers the following recommendations.
- In making these recommendations our key considerations were interventions we believe would be most impactful while minimizing increased expenses.
- We have suggested seven interventions, designating four of them as high priority.

High Priority Recommendation 1: Subsidization of Childcare Expenses

- While childcare expenses are an ongoing issue for members of the Columbia community, COVID-19 has added new barriers to finding and using safe and available childcare. Closures, temporary, ongoing or unpredictable, of day care centers and schools have aggravated the demand for childcare far beyond those in a normal year. We recommend exploring two supports (one focused on faculty/staff/administrators and one on students):
 - Barnard* and Teachers College* have negotiated with Bright Horizons to include coverage for private care providers during the COVID-19 crisis. For many reasons (including a lack of availability of BH caregivers, concerns about the quality of BH's providers, and the need to minimize the number of providers in a home given virus transmission risks), we strongly recommend that Columbia do the same. We understand that expanding this benefit to everyone may not be fiscally possible and suggest that the University consider prioritizing those employees who make below a certain income if necessary.
 - Subsidies for students who require childcare vary significantly across schools within the University. We recommend that the University provide a centrally managed pool of grant funds for which students can apply, modeled on Cornell's need-based childcare grant program.

High Priority Recommendation 2: Extending Tutoring and Support Programs for K-12 Students

Many of our families have school age children who have severely limited or no in-person instruction at their schools. This has meant that parents and guardians have had to supervise remote-schooling along with their own work responsibilities. We recommend the university develop, pay and manage a tutor corps available to any family that would like to use them. This would be an extension of the tutoring program developed for the families of the medical school over the spring and summer of 2020.

High Priority Recommendation 3: A Transparent Policy Supporting Parents in Key Educational/Career Moments

Pre-tenure (and, to a lesser extent, pre-promotion) faculty, postdoctoral fellows, and students are all experiencing career interruptions during COVID-19. We recommend that the University commit to:

- Placing formal letters in faculty and fellow files noting any possible career impacts from COVID-19, including but not limited to delays in publication, funding, and/or data collection as well as noting reduced opportunities for networking that may impact external letter responses.
- Transcript notifications for students for any semesters impacted by COVID-19 (including, to date, Spring, Summer, and Fall 2020, and Spring 2021).

High Priority Recommendation 4: Guidance for Managers, Leaders, and Faculty About Supporting Flexibility

While there are countless cases of individual managers and faculty providing understanding and flexibility during COVID-19, there are also those who want to be supportive but do not know how. To that end, we recommend that the University:

- Develop and share widely a memo from HR for managers about how to support flexible work arrangements during this time, as well as how to promote asynchronous work (which, by virtue of being flexible, can allow caregivers to complete their work well when they are able to).
- Clarify for faculty and academic department staff allowable mechanisms for granting flexibility to students. In particular, adding dependent-care emergencies to the list of appropriate reasons to grant an excused absence from class would be helpful. Elective alternative grading policies have been well received and should, where possible, be continued throughout the crisis.

Additional Recommendations for Consideration

Dedicated student-parent support. Supporting student parents will continue to be necessary for recruiting and retaining the best students. We suggest that the University consider ways to continue supporting student parents through the the Office of Work/Life.

Improved data collection/capture. Ascertaining what supports would be helpful for the community have been hampered by inconsistent and/or nonexistent data. Comprehensive data collection efforts (managed and maintained by the appropriate offices in order to maintain confidentiality) on work/life demands for faculty, staff, and students would ensure that the University is better positioned to meet such challenges head on in the future.

Consideration regarding testing and vaccination for families and caretakers. We recognize it is key for the safe return to work for our community members that all members of their families and immediate households have access to testing and vaccination. We ask that the university consider where it may be able to extend benefits it is already offering in this area to those on the same health insurance policy as the Columbia affiliate.

To: Interim Provost Katznelson
Senior Executive Vice President Rosberg
From: Sens. Daniel Savin and Manuela Buonanno, Research Officers Committee
February 11, 2021

RE: The need for a more stringent COVID testing regime

Dear Gerry and Ira:

The COVID-19 pandemic is, and will continue to be, a situational issue that requires significant time and effort on the part of Columbia and its affiliates. We applaud the extraordinary efforts made by Columbia leadership and the COVID-19 Task Force. Recently, important concerns over the current testing policy have come to light, affecting particularly those working in CUIMC laboratories: graduate students and postdoctoral researchers, staff, and professional officers of research. These individuals, most of whom are not currently eligible for vaccination, require public transportation, work within laboratories with limited social distancing, and have direct contact with patients and healthcare workers who may themselves be exposed to COVID. Our testing protocol, therefore, requires strengthening.

University testing has routinely found low numbers of positive tests. However, following winter break, the surrounding areas of the city have seen an increase in positivity rate. Moreover, 37 percent of total positive tests identified to date by the University occurred in the month of January 2021. This indicates that positive individuals could potentially be entering campus at higher rates. Undergraduates living in dorms are required to have twice-weekly testing. This policy, however, does not extend to other groups entering campus and it is estimated that 5,000 affiliates¹ enter campus weekly without routine testing. Prior testing policies may have been appropriate when positivity rates remained low. However, positivity rates have changed and the University's approach should evolve accordingly.

A portion of our community is vaccinated, but can carry SARS-CoV-2. While these individuals are likely protected from severe disease, they interact with unvaccinated individuals for whom there is no testing program. Given the high positivity rate, the discovery of highly-transmissible variant strains, and the increased number of individuals entering campus, we recommend that the testing policy be expanded to require weekly testing for all affiliates who enter campus one day or more per week. Furthermore, we recommend that, following an initial positive test, a negative test be required in order to return to campus.

Thank you for your time, efforts, and continued work for the safety of the Columbia Community.

Sincerely,

Sens. Daniel Savin (Chair) and Manuela Buonanno (Vice Chair)

On behalf of Research Officers Committee

Endorsed by the Commission on the Status of Women and Student Affairs Committee

¹ As explained by Dr. Melanie Bernitz in the January 29, 2021 plenary.

The Need for a More Stringent Testing Regime: *A Scientist's Perspective*

Adrian Brügger, PhD

Director of Robert A.W. Carleton Strength of Materials Laboratory
Adjunct Assistant Professor & Associate Research Scientist
Department of Civil Engineering & Engineering Mechanics

Sen. Regina Martuscello, PhD

Associate Research Scientist
Department of Pathology and Cell Biology

ACHA Guidelines & SARS-CoV-2 Screening Strategies

Multi-layer mitigation strategy for controlling COVID-19 where all links are critical:



“In an IHE setting, with frequent movement of faculty, staff and students between the IHE and the community, a strategy of entry screening combined with regular serial testing might prevent or reduce SARS-CoV-2 transmission.”¹

Testing models indicate test frequency was most strongly associated with cumulative infection, with 1 test every 7 days identifying 90% of true infections.²

1- ACHA Guidelines: Considerations for Reopening Institutions of Higher Education for the Spring Semester 2021. Dec 2020

2- Paltiel, David A, Et al. Assessment of SARS-CoV-2 Screening Strategies to Permit the Safe Reopening of College Campuses in the United States. JAMA Network Open. 2020;3(7)

Mixed Population Interaction

Diverse population circulating at Columbia:

! Students in congregate housing ! "#\$%&' " (\$

! Other students

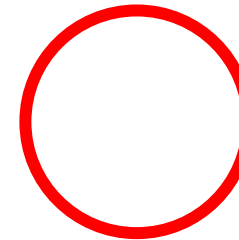
! Faculty

! Research Officers & Technicians

! Officers of Administration

! Support Staff & Facilities Workers

*! "#\$%&' " (\$
+ " : # \$ - . # \$ / 0



Important Points

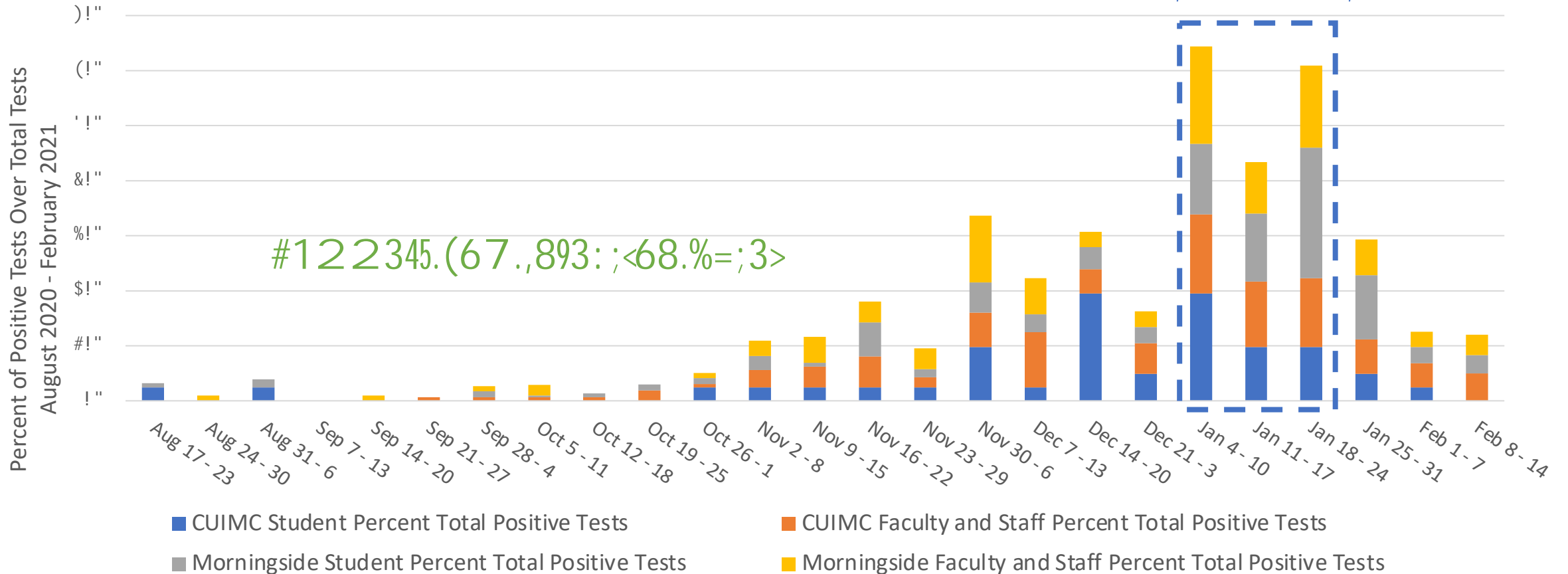
- ! Most ROs currently not eligible for vaccination
- ! Most ROs are not eligible for N95 masks (cloth and surgical masks with 70%-90% efficacy)
- ! Daily Attestation blind to asymptomatic and cavalier individuals (engaging in risky behavior)
- ! Reports of researchers coming to work while sick, for fear of reprisals or cavalier attitude
- ! Timely detection of hot spots requires vigilance in testing

Columbia Testing Numbers

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Total Student Tests	Positive Student Tests		Total Faculty Tests	Positive Faculty Tests	
93,390	315	0.34%	45,093	267	0.59%

Percent of Positive Tests Over Time



Variants

Known Variants

! B.1.1.7 – UK Variant

- ! January 13, 2021, 76 cases in 12 states¹
- ! February 14, 2021, 1173 cases in 40 states²

! B.1.352 – SA Variant

- ! January 13, 2021, 0 cases in states¹
- ! February 14, 2021, 17 cases in 8 states²

! P.1 & P.2 – Brazil Variants

- ! January 13, 2021, 0 cases in U.S.¹
- ! February 14, 2021, 3 cases in 2 states²

New Variants: NYC & CUIMC

! Research at CUIMC demonstrates SARS-CoV-2 antigenic drift from extensive mutations in the spike that lead to antigenic changes detrimental to mAb therapies and vaccine protection.¹

! In NYC:²

- ! 6 cases of B.1.1.7, 1 case of B.1.352 and 1 case of P.2
- ! A **new** NYC variant has been identified that shares a key mutation (E484K) with the SA and BZ variants.
 - ! E484K mutations are in the receptor binding domain (RBD)

! At CUIMC:²

- ! 60 cases of NYC variant with prevalence increasing from about 3% to 12% in the past week
- ! A study accepted in Nature from Dr. Ho indicates that the E484K mutation poses a threat to mAB therapy, vaccine efficacy as well as resistance to re-infection.

Strong Testing Protocol is Critical to Detect New Variant Dynamics

1- Galloway, SE., et al. Emergence of SARS-CoV-2 B.1.1.7 Lineage — United States, December 29, 2020–January 12, 2021. Morbidity and Mortality Weekly Report US Department of Health and Human Services/Centers for Disease Control and Prevention. Jan 2021

2- CDC website – Covid cases by variant

1- Wang, P. et al. Increased Resistance of SARS-CoV-2 Variants B.1.351 and B.1.1.7 to Antibody Neutralization. **BioRxiv** Jan 2021

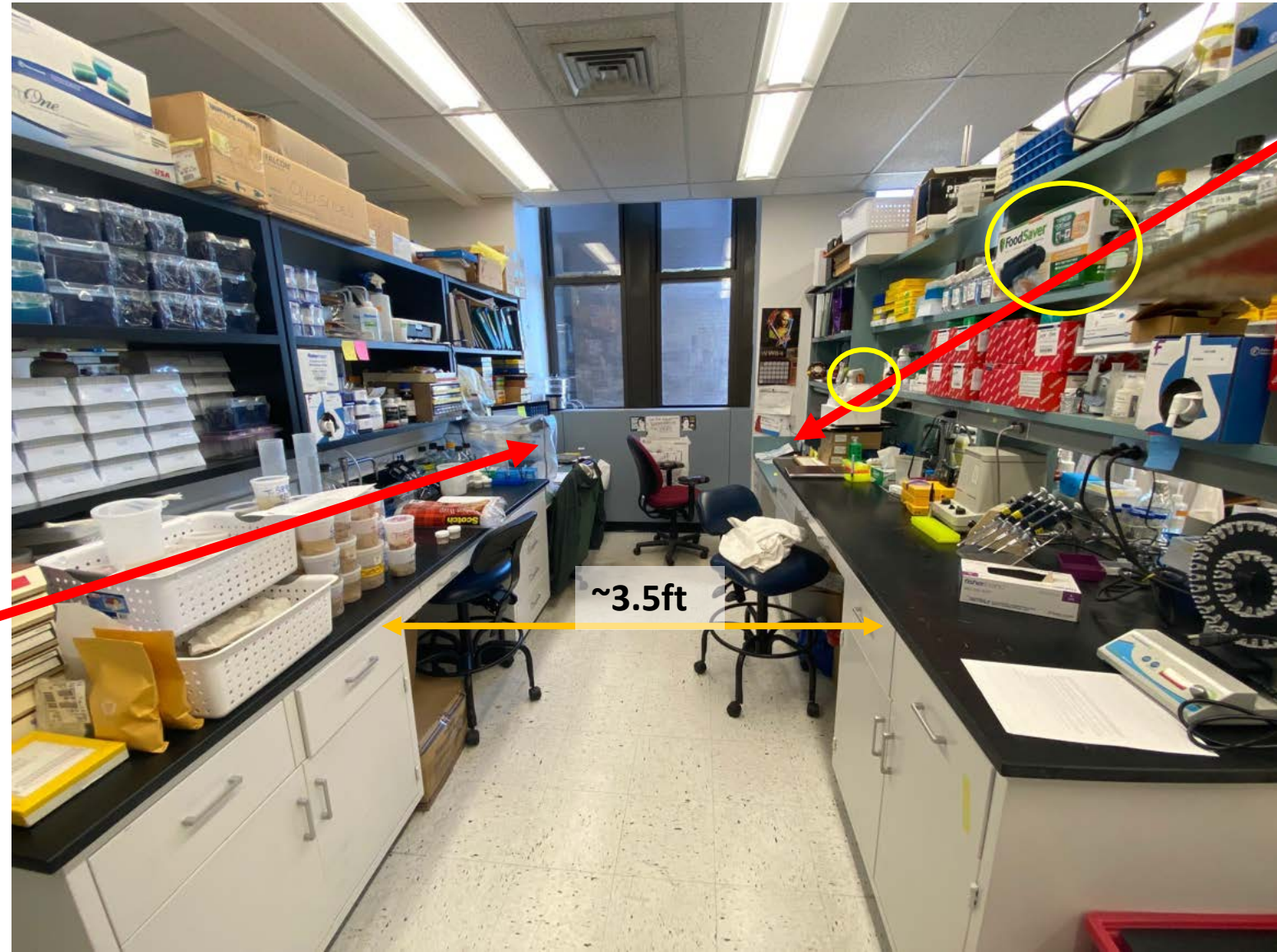
2- David Ho, MD & Anne-Catrin Uhlemann, MD, PhD – Columbia University Covid Symposium, manuscript accepted

Vaccine Resistance to E484K

Fold change of IC50 from WT		Moderna vaccinee sera												Pfizer vaccinee sera									
		V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22
UK	UKΔ8	-2.7	-2.2	-3.0	-1.2	-1.7	-1.9	-1.2	-1.9	-1.4	1.0	-1.2	-1.8	-1.6	-1.9	-2.1	-1.8	+1.1	-2.4	-2.3	-3.2	-1.1	+1.1
	69-70del	+1.4	+1.4	-1.3	+1.2	-1.3	-1.1	+1.9	+1.1	+1.5	-1.4	+1.3	+1.3	-1.4	+1.3	-1.0	-1.0	-1.5	-1.3	+1.3	+1.3	-1.4	+2.1
	144del	-1.1	-1.2	-1.4	+2.1	-1.2	-1.2	-1.1	-1.2	-1.2	-1.1	+1.1	-1.3	-1.2	-1.7	-1.2	-1.2	-1.3	+1.1	-1.2	-1.6	+1.1	-1.3
	N501Y	+1.5	+1.1	-1.8	+1.6	-2.0	+1.9	+2.2	-2.0	-1.2	+4.6	+2.9	-1.2	-1.2	+1.2	-2.1	-1.6	-1.6	-1.5	-1.1	-2.4	-1.4	1.0
	A570D	+1.4	+2.2	+1.2	+2.4	+1.7	+1.6	+2.2	+1.5	1.0	+1.5	+1.4	+1.6	+1.2	+1.5	+1.5	+2.6	+1.2	+1.3	+1.8	+1.1	-1.2	+1.4
	P681H	+2.2	+1.2	-1.7	-1.5	-1.5	+1.0	+1.1	-1.4	1.0	-1.1	+1.1	+1.1	+1.2	+1.2	-1.3	+1.1	-1.1	-1.1	-1.0	-2.1	-1.3	-1.0
	T716I	+1.1	-1.1	-1.1	+1.6	+1.3	+1.3	+1.8	+1.1	1.0	+1.6	+1.2	+1.4	+1.7	+1.4	+1.3	+1.1	+1.1	+1.3	+1.1	+1.6	+1.1	+1.1
	S982A	-2.3	-1.5	-2.6	-1.8	-2.0	-1.6	-1.3	-2.5	-1.7	-1.5	-1.5	-1.5	-1.2	-1.6	-1.6	-1.7	-1.5	-1.9	-1.6	-2.4	-2.0	-1.3
D1118H	-1.2	+1.1	-1.2	-1.4	+1.1	1.0	1.0	-1.5	-1.2	-1.1	1.0	+1.1	-1.2	-1.2	-1.6	-1.6	-1.2	-1.5	-1.2	-1.3	-1.7	-1.3	
SA	SAΔ9	-6.9	-8.4	-22.7	-11.0	-6.1	-7.7	-2.9	-10.0	-4.8	-3.2	-13.0	-6.6	-3.0	-2.2	-9.2	-3.5	-2.5	-7.5	-10.4	-4.5	-15.0	-2.5
	L18F	+1.9	1.0	-1.8	-1.1	-1.3	1.0	+3.3	-1.5	1.0	+1.2	+1.8	1.0	+1.2	-1.3	+1.2	+1.2	1.0	-1.4	+1.4	-1.4	-1.5	+1.4
	D80A	+1.2	+1.5	-1.1	+2.1	+1.1	+1.5	+1.8	-1.5	+1.4	+3.0	+1.3	+1.1	+1.8	1.0	+1.2	+1.4	-1.5	-1.8	1.0	-1.8	-1.3	+1.1
	D215G	-1.3	+1.1	+1.1	-1.2	+1.3	+1.2	-1.1	-2.9	-1.1	+2.7	+1.1	-1.3	-1.1	+1.1	-1.8	-2.0	-1.2	-1.8	-1.3	1.0	-1.2	+1.1
	242-244del	-3.6	1.0	-1.3	-1.8	-1.7	-1.3	-1.7	-1.7	-1.4	-1.5	-1.6	-1.6	-1.4	-1.9	-1.4	-1.3	+1.5	+1.1	-1.3	-2.8	-1.6	-1.8
	R246I	-1.6	+1.1	-2.0	-1.1	-1.7	-1.2	+1.1	-2.1	-1.3	-1.1	1.0	-1.7	-1.5	-1.2	+1.6	1.0	+1.3	+2.0	+2.9	-4.0	1.0	-1.1
	K417N	+1.6	+1.4	-1.1	1.0	1.0	-1.2	+1.7	-1.3	+1.1	+1.4	-1.3	+1.5	+1.4	+1.8	+1.2	+1.4	-1.5	+1.9	+2.0	1.0	-1.8	+1.6
	E484K	-3.0	-2.3	-3.9	-4.0	-1.4	-2.8	-1.3	-3.3	-2.2	-2.6	-3.2	-1.8	-1.9	-2.7	-2.1	-1.6	-2.9	-11.3	-3.3	-3.2	-3.1	-1.8
N501Y	+1.5	+1.1	-1.8	+1.6	-2.0	+1.9	+2.2	-2.0	-1.2	+4.6	+2.9	-1.2	-1.2	+1.2	-2.1	-1.6	-1.6	-1.5	-1.1	-2.4	-1.4	1.0	
A701V	-1.1	-1.2	-1.9	-2.2	-1.7	-1.6	-1.4	-1.7	+1.2	+1.1	+2.1	-1.1	-1.2	-1.3	-1.2	-1.1	-2.1	-1.5	-1.4	+1.1	-2.2	-1.5	

Red: resistance >2 fold; Green: sensitization >2 fold

Social Distancing Lab Dilemma



Technician Desk

My Desk

~3.5ft

Even with reduced laboratory occupancy, access to shared equipment/reagents inevitably results in close-quarter interactions. There is little to no space for ROs to eat eat/drink/rest and safely remove masks.

Conclusions

! Due to:

- ! The current ACHA guidelines on weekly testing,
- ! The highest rates of positive individuals found to date in gateway testing,
- ! The increasing SARS-CoV-2 variants and newly emerging US variants,
- ! The vaccinated and unvaccinated populations working together (unknown transmission vector), and
- ! The inability to effectively socially distance within laboratory spaces

The Research Officers Committee of the Senate, with support from the Commission on the Status of Women and the Student Affairs Committee – request mandatory weekly testing for all affiliates who enter the campus at least one day a week.

Furthermore, consideration for a negative COVID PCR test, following a positive COVID diagnosis, be required prior to returning to campus.

Thank you for your attention.