

Faculty Council Meeting
Meeting Minutes
Monday, June 21, 2021
4:00-5:30PM – ZOOM Meeting

Timing	Agenda Item	Presenter	Summary of discussion	Action items/Motions/ Votes
4:00-4:05PM	Welcome and Chair Announcements	Jennifer McBride	Alan Levine will not be able to join the meeting today; Matthias Buck will present Plan A as well as the survey results sent out by the Faculty Senate. The ballot for serving on the standing committees is now open. An email was sent today to all full time faculty with instructions; voting closes on July 6 at 5:00PM. Any write-in candidate will be reviewed by the NEC for eligibility.	
4:05-4:10PM	Faculty Council Steering Committee Report of	Nicole Ward	See attachment.	
4:10-4:15PM	Approval of the May 17 Faculty Council Meeting Minutes	Jennifer McBride	<p>Because of the quantity of edits proposed, the Chair suggested that the edits be reviewed and voted on by sections.</p> <p>It was proposed to accept the revisions made to the Faculty Council Steering Committee Report of Activities Section.</p> <p>Dr. McBride suggested that the discussion and revisions to the minutes be postponed until after the New Business agenda item.</p>	<p>A motion to approve was made by a FC member, and seconded by FC member. Vote: 27 for, 0 against, 0 abstentions. Motion approved.</p> <p>A motion to approve was made by a FC member, and seconded by FC member. Vote: 26 for, 1 against, 3 abstentions. Motion approved.</p> <p>A motion to approve was made by a FC member, and seconded by FC member. Vote: 26 for, 0 against, 2 abstentions. Motion approved.</p>

4:15-4:20PM	Plan A	Matthias Buck	See attached. A motion was made to approve this resolution and adopt it with respect to Plan A.	Motion proposed by FC member, seconded by FC member. Vote: 25 for, 2 against, 4 abstentions. Motion is approved.
4:20-4:30PM	Faculty Senate Executive Committee Survey Results	Matthias Buck	Please see attached report/presentation.	
4:30-4:40PM	Nomination & Elections Committee Results	Danny Manor	<p>Please see attached report/presentation.</p> <p>Danny Manor, Chair of the SOM Nomination & Elections Committee, reported to Faculty Council on the election results.</p> <p>The NEC voted to carry out the FCSC run-off election between Drs. Harte and Senthikumar at today's Faculty Council Meeting.</p> <p>There were three candidates for Faculty Council Representatives on the NEC: Katherine DiSano, Jamie Wood, and Hemalatha Senthikumar, all of which had one vote each. Faculty Council voted to determine who would fill the two seats.</p>	<p>Dr. Senthikumar is the fifth member of the Faculty Council steering Committee. When the vote was polled, 16 were in favor of Dr. Senthikumar, and 14 in favor for Dr. Harte.</p> <p>Dr. DiSano and Dr. Wood were elected to the NEC. 15 votes for Katherine DiSano; 21 votes for Jamie Wood; and 14 votes for Hemalatha Senthikumar</p>
4:40-5:00PM	<p>Standing Committee Reports</p> <ul style="list-style-type: none"> - Lecture Committee - Committee on Students - Nomination & Elections 	<p>Matthias Buck</p> <p>Susan Padrino</p> <p>Danny Manor</p> <p>Neil Greenspan</p> <p>Amy Hise</p>	<p>Please see attached report/presentation.</p> <p>Please see attached report/presentation.</p> <p>Please see attached report/presentation.</p> <p>Please see attached report/presentation.</p> <p>Please see attached report/presentation.</p>	

5:00-5:10PM	Honors Research Track in Bio-chemistry Undergrad Program	Martin Snider	Please see attached report/presentation. A motion was made and seconded to support the formation of the Honors Research Track in Biochemistry.	Motion proposed by FC member, seconded by FC member. Vote: 30 for, 0 against, 0 abstentions. Motion is approved.
5:10-5:20PM	Faculty Council Annual Chair Report	Jennifer McBride	Please see attached slide.	It was suggested that an addendum to the NEC report be provided to Faculty Council with a list of nominees who met the criteria but were not selected by the committee to be placed on the ballot. Dr. Manor will send the list to Nicole Deming to post on BOX.
5:20-5:30PM	Adjourn			

Members Present

Corinne Bazella
Robert Bonomo
Matthias Buck
Bryan Carroll
Gary Clark
Darin Croft
Brian D'Anza
Piet de Boer
Philipp Dines
William Dupps
Todd Emch
Judith French
Thomas Gerken

Moncia Gerrek
Stan Gerson
Anna Maria Hibbs
Amy Hise
David Katz
Suet Kam Lam
Maria Cecilia Lansang
Lia Logio
Danny Manor
Jennifer McBride
Maureen McEnery
Sam Mesiano
Matthew Pleshinger

Elie Anthony Saade
Ashleigh Schaffer
Hemalatha Senthilkumar
Patricia Taylor
Sarah Tehranisa
Heather Vallier
Allison Vidimos
Satish Viswanath
Susan Wang
Nicole Ward
James Wilson
Jo Ann Wise
Jamie Wood

Members Absent

Melissa Bonner
Cathleen Carlin
Jae-Sung Cho
Scott Cowen
Katherine DiSano
Robert Geertman
Peter Harte
Jeffrey Hopcian
Alex Huang

Darrell Hulisz
Beata Jastrzebska
Ankur Kalra
Laura Kreiner
Varun Kshetry
Vinod Labhasetwar
Alan Levine
Peter MacFarlane
Ameya Nayate

George Ochenjele
Clifford Packer
Nimitt Patel
Abhishek Ray
Arne Rietsch
Linda Dalal Shiber
Daniel Sweeney
Daniel Tisch
Carlos Trombetta

Others Present

Nicole Deming
Susan Freimark
Neil Greenspan

Joyce Helton
Nelson Scott Howard

Susan Padrino
Martin Snider



**Faculty Council Meeting
Draft Meeting Minutes**
Monday, May 17, 2021
4:00-5:30PM – ZOOM Meeting

4:00-4:05PM	Welcome and Chair Announcements	Jennifer McBride
4:05-4:10PM	Faculty Council Steering Committee Report of Activities	Nicole Ward
4:10-4:15PM	Approval of the April 19 Faculty Council Meeting Minutes	Jennifer McBride
4:15-4:25PM	Committee Elections	Jennifer McBride
4:25-4:55PM	Standing Committee Reports o Committee on Admissions o Committee on Bylaws o Committee on Budget, Finance and Compensation	Todd Otteson Darin Croft Agata Exner
4:55-5:05PM	Update on the Ad hoc Professionalism Committee	Todd Otteson
5:05-5:15PM	Plan A Letter to President, Provost, and CFO	Matthias Buck
5:15-5:25PM	Faculty Council Senate Report	Alan Levine
5:25-5:30PM	New Business	
5:30PM	Adjourn	

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Members Present

Corinne Bazella	Robert Geertman	Jennifer McBride
Robert Bonomo	Thomas Gerken	Maureen McEnery
Matthias Buck	Monica Gerrek	George Ochenjele
Bryan Carroll	Stan Gerson	Arne Rietsch
Cathleen Carlin	Peter Harte	Elie Anthony Saade
Jae-Sung Cho	Anna Maria Hibbs	Ashleigh Schaffer
Gary Clark	Amy Hise	Hemalatha Senthilkumar
Darin Croft	Alex Huang	Sarah Tehranisa
Piet de Boer	Darrell Hulisz	Daniel Tisch
Philipp Dines	Beata Jastrzebska	Satish Viswanath
Katherine DiSano	David Katz	Susan Wang
William Dupps	Vinod Labhasetwar	Nicole Ward
Todd Emch	Maria Cecilia Lansang	James Wilson
Judith French	Danny Manor	Jo Ann Wise

Members Absent

Brian D'Anza	Lia Logio	Linda Dalal Shiber
Melissa Bonner	Peter MacFarlane	Daniel Sweeney
Scott Cowen	Sam Mesiano	Patricia Taylor
Jeffrey Hopcian	Ameya Nayate	Carlos Trombetta
Ankur Kalra	Clifford Packer	Heather Vallier
Laura Kreiner	Nimitt Patel	Allison Vidimos
Varun Kshetry	Matthew Pleshinger	Jamie Wood
Suet Kam Lam	Abhishek Ray	

Others Present

Mark Chance	Joyce Helton	Alan Levine
Nicole Deming	Cynthia Kubu	Todd Otteson
Agata Exner		

Chair Announcements

Jennifer McBride, Chair of Faculty Council, called the meeting to order at 4:02PM. She thanked Dean Gerson for his presentation at the May 11 third meeting of the faculty.

Today's agenda highlights: the finalizing of the candidates for Faculty Council, Chair-Elect of Faculty Council, members of the Faculty Council Steering Committee, and Faculty Council representatives to serve on the Nomination and Elections Committee. ~~T committees~~ The NEC has worked diligently to recruit candidates and the statements of interest are available in BOX. At today's meeting, we will be soliciting nominations from the floor for those who would like to self-nominate, or nominate someone else (with their consent).

Faculty Council Steering Committee Report of Activities (Nicole Ward)

Nicole Ward, Chair-elect of Faculty Council, reported that the Steering Committee met on May 3.

The FCSC supported approval of the list of graduates for the class of 2021, listened to a presentation from Dr. Harding on the new faculty information system (FIS) and how it will interact with the FASF, reviewed annual reports from the standing Committees on Bylaws, Budget, Finance and Compensation, and Admissions, as well as an update from the ad hoc Professionalism Committee.

Under new business, Dr. Matthias Buck, a member raised concerns of the FCSC, proposed that the lack of a clear plan to compensate faculty and staff for austerity measures taken during the pandemic that resulted in lost income be discussed under new business. The committee developed and approved the Faculty Council agenda for today's meeting.

Approval of the April 19 Faculty Council Meeting Minutes

A motion was made and seconded to approve the minutes as submitted. There being no further discussion, a vote was taken. 28 were in favor, 1 was opposed, and 2 abstained. The motion passes.

Faculty Council Elections

The next item on the agenda was to finalize the ballot for the Chair-elect and Steering Committee of the Faculty Council. The next business item will finalize the ballot for the Faculty Council elections (Faculty Council Chair-elect, Faculty Council Steering Committee, and Faculty Council representatives on NEC. NEC has solicited nominees for these vacancies and approved candidates

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1 for the ballot. A Faculty Council presentative requested of the Chair that the Faculty Council see
2 the names of the candidate on the ballot created by the NEC in advance of the Chair calling for
3 nominations from the floor. The same Faculty Council representative, who is a member of the
4 NEC, withdrew their votes that were cast in what they called “an illegitimate process followed by
5 the NEC this year.”

6
7 Darin Croft and Sam Mesiano have submitted statements of interest for Chair-elect, which can be
8 found in the Faculty Council 2020-21 May 17, 2021 sub-folder under the Faculty Council –
9 Candidate Statements.

10
11 A Faculty Council member, who is a member of the NEC, requested that the names of the
12 candidates approved by the NEC be shared before nominations were solicited from the floor.
13 Because an eligible candidate for the FCSC had been disqualified, this person withdrew their votes
14 based on the illegitimate process employed by the NEC.

15 The FC Chair asked A Representative asked for clarification of the Chair’s comment on the
16 actions taken by the NEC in their review of the statements of interest that were submitted and
17 transparency regarding criteria that were applied during the review process.

18
19 Danny Manor, Chair of the Nomination and Elections Committee, to summarize and reveal the
20 process the NEC used to review the statements of interest. Dr. Manor said the purpose of the
21 meeting from last week was to discuss the slate of nominees and candidates for the Faculty
22 Council elections. Dr. Manor noted that during the NEC’s discussion, he had articulated two said
23 there were conflicting views of the NEC’s role: View 1, expressed specifically regarding the FCSC
24 about how those slates should be populated. One opinion was that all eligible candidates everyone
25 who submitted a statement of interest and was eligible according to the Bylaws should be placed
26 on the ballot; and View 2. Others, he said, had a different opinion and felt that the NEC should
27 promote “diversity” by disqualifying candidates who had served on multiple it was within the
28 charge of the committee to address the need for a diverse slate of nominees and, so, encourage
29 those who have less service on committees in the past even if at the expense of those who have
30 had sustained and repeated service on these candidates were eligible according to criteria outlined
31 in the Bylaws and committee charges. committees. After discussion, the Members of the NEC
32 then voted on whether candidates would be each nominee, and those that obtained a majority of
33 votes were placed on the ballot, slate presented today.

34
35 Five vacancies need to be filled on the Steering Committee. When polled for nominations from
36 the floor, Amy Hise was nominated (her consent had already been given). Peter Harte was also
37 nominated from the floor; he had previously submitted a statement of interest to the NEC but did
38 not receive a majority of the votes from members of that committee. There were no other
39 nominations from the floor.

40
41
42 Two vacancies for Faculty Council members on the Nomination and Elections Committee need to
43 be filled. When polled for nominations or self-nominations from the floor, Peter Harte was
44 nominated. His consent of nomination must be sent via email to Nicole Deming, Secretary of the
45 Faculty, by Wednesday May 19, at 9:00AM.

46
47 There being no other nominations, the chair announced the nominations closed. The NEC will
48 review the ballot and send it out electronically for voting; the ballot will remain open until June 7.

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Commented [A1]: The information in the original version of the FC Minutes is factually incorrect. Following his nomination from the floor, Peter Harte was listed as a candidate for FCSC circulated on May 21, 2021 by Nicole Deming, Secretary of the Faculty of Medicine.

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Moved up [1]: A Faculty Council member inquired about the NEC's reasoning for disqualifying candidates who were eligible to run based on the criteria outlined in the Bylaws.¶

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Commented [A2]: The Secretary of the Faculty's statement that Dr. Harte would need to respond by Wednesday morning is inconsistent with Robert's Rules of Order, which govern Faculty Council meetings and operations. nomination as a Faculty Council candidate is correct.

Committee on Admissions (Todd Otteson)

The Admissions committee met 12 times during the academic year and reviewed the 7,359 applications received by the university program, of which 923 candidates were offered interviews with very few cancellations. It also approved the admissions decisions from the MSTP Steering Committee and the Cleveland Clinic Lerner College of Medicine (CCLCM) subcommittees. The committee was asked to compose a class of 216 (169 for the university program, 32 for the college program and 15 for the MSTP). The school received 8,830 applications for all of the MD programs, which was an 8% increase (704 applications) from the year prior; an all-time high for us. Applications increased 17% nationally this year.

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Plans for 2021-22 are to continue with a virtual interview season next year. The goal is to add more screeners to assist with the increasing number of applications. In April 2021 the Admissions Team was given permission to host limited tours for accepted students in the HEC.

Committee on Budget, Finance and Compensation (Agata Exner)

Agata Exner, Chair of the CBFC, stated that the committee will have five vacancies for the upcoming year.

Dr. Exner stated that despite COVID-19, the SOM continues to do well overall. Analysis of faculty salaries between FY19-20 will be presented to the CBFC at the May 2021 meeting. The 3-5 year strategic plan, as it relates to research, teaching and faculty development, was given.

The committee request more clarity from the CFO and Provost regarding decisions made in response to COVID-19. The response was that 50% of Plan A will be retroactively restored for FY 2021, and fully reinstated for FY 2022.

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The CBFC is working on gender disparities and decile benchmarked to AAMC faculty salary averages. No statistically-significant evidence showing a gender pay gap at the SOM was found. The committee's recommendations were presented to the Dean.

A town hall is planned in May-June. Topics for FY22 include faculty salaries vs. peer institutions, and analysis (if possible) of compensation in regards to URM faculty. Affiliation agreement negotiations will continue to be monitored. Committee is working to determine and better define the meaning of tenure in the CWRU SOM and clinical affiliate faculty, discussion and clarification of "salary" versus "compensation", and a discussion of faculty retentions and departures over the last several years. Previous topics from FY21 will be revisited.

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Committee on Bylaws (Darin Croft)

The 5-year review was completed in the 2019-2020 academic year, and the majority of proposed amendments were approved by Faculty Council and the Faculty of Medicine by the end of that year. The Bylaws Committee has two open slots in the upcoming election.

Dr. Croft presented a brief overview of the bylaws amendments passed by Faculty Council during this last year and the end of the previous academic year.

The committee met with Dean Gerson to discuss his observations and suggestions for parts of the SOM bylaws that could benefit from clarification and/or modification. The Bylaws Committee is currently working with the committee chairs to update the brief descriptions of their committees, and determine what should be moved into the bylaws.

1 **Update on Ad hoc Professionalism Committee (Cynthia Kubu and Todd Otteson)**

2 The committee charge was approved by Faculty Council on February 17, 2020 with the committee
3 slated to sunset in June 2021.

4
5 The committee has met with leadership from University Hospital and Cleveland Clinic; meetings
6 are scheduled with MHMC with the VA and SOM soon to follow. They have reviewed literature
7 on professionalism and leveraged contacts at peer institutions to establish best practices. The
8 committee plans to meet with HR and Legal from CWRU and the hospital systems in July. Town
9 hall meetings on professionalism are being planned at each location in July and August. The
10 committee hopes to draft the code of conduct this summer and present it, along with
11 recommendations about implementation, to Faculty Council in September.

12
13 A motion was made and seconded to extend the ad hoc Professionalism Committee lifetime for
14 another year; it will sunset in June 2022. There being no further discussion, a vote was taken. 31
15 were in favor, 5 were opposed, and 3 abstained. The motion passes.

16
17 **Plan A**

18 The Chair informed Faculty Council that Dr. Buck has asked to postpone this agenda item as he is
19 currently in South Korea and having difficulty accessing the internet.

20
21 **Faculty Senate Report (Alan Levine)**

22 The Faculty Senate activities for the 2020-2021 academic year included approval of new and
23 modified university policies and academic programs such as the SOM Certificate in Experimental
24 Biotechnology, the SOM bylaws revisions, and the SOM modifications to the Master of Science in
25 Anesthesia. Dr. Levine stated that the pandemic and lockdown have had a major effect on
26 women, more than men, and a gender specific response needs to be developed by the school.

27
28 Guest reports discussed the switch in the insurance company that supports both staff and faculty
29 benefits, and why this organization was chosen as the single insurance plan administrator, and
30 how the library should be funded. The Faculty Open Access policy was introduced and discussed
31 at Faculty Council; more town hall meetings are planned in the summer or fall. The grant
32 submission policy was updated; this may not yet have come up to the Faculty Senate for a vote.
33 The NIH is requiring, by midnight on May 24, that all grants coming through Case have the new
34 bio sketch format.

35
36 The final report from the survey on the impact of COVID-19 on personal lives, etc., should be
37 issued over the summer or early fall. The initiative to increase recruitment in underrepresented
38 populations and the disenfranchised across the campus is continuing. There has been a one year
39 extension of the pre-tenure period given for faculty beginning their appointment at CWRU
40 between January 1st and June 30th, 2021.

41
42 The university intends to resume in person course delivery, research activities and increase student
43 residence capacity, as well as other campus operations, by July 1. The fall semester is planned to
44 be 100% in person. Conditions, however, are subject to change based on variants and other
45 external factors. The COVID-19 impact statement is being placed in promotion and tenure files.
46 We are in the process of streamlining the J1 Visa process for students.

47
48 Following a discussion, the CWRU Faculty Senate passed a resolution objecting to the strategy
49 used at John Carroll University in the face of Budgetary Hardships. Based on frustration
50 concerning the university administration's handling of Plan A, salary increases last year and this
51 year; and shared governance, an emergency meeting of the Faculty Senate was requested to occur

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1 at 1:00PM on this coming Thursday. Validation by the Faculty Senate ExCom that this meeting
2 should occur is still forthcoming. Dr. Levine will share information with everyone as soon as
3 becomes available.

4
5 **New Business**

6 When the council was polled, no new business items were identified. A motion was made and
7 seconded to adjourn the meeting.
8 The meeting was adjourned at 5:21PM.

9
10 Respectfully submitted,

11
12 Joyce Helton

Dear Interim President Cowen
Dear Provost Vinson III
Dear Chief Financial Officer Sideras

Cleveland 4/27/2021

We first wish to express our appreciation of your efforts during the ongoing COVID-19 pandemic, an extremely challenging time and crisis unprecedented in anyone's memory. We recognize that COVID-19 added an enormous amount of work for faculty, staff and administration, and greatly complicated many of our usual tasks. The effort of the University administration in meeting all of these challenges is gratefully noticed and appreciated. Thank you!

We understand that the decisions in late FY20 regarding the COVID-19 Financial Contingency Plan for FY21 were not easy and many faculty and also some school administrators felt blindsided by the pace and scope of the sweeping financial measures enacted. While necessary in the face of the considerable uncertainty facing the University as it planned for FY21, the way the decisions were made and communicated were questionable to many. Much has been learned since those days - on multiple sides, and we all eagerly await the return to something approaching normalcy. We were pleased to hear that the Board of Trustees reinstated salary raises and retirement contributions for FY22 and that faculty and staff hiring as well as infrastructure projects are slated to return to normal levels. In FY21, many ThinkBig projects could eventually be funded and two large building projects went ahead. Overall one might say the University has done well and we should be confident of a bumper year for undergraduate as well as many graduate and professional-program enrollments. The equity markets have risen rapidly to unprecedented levels, so donors will have discretionary funds. Furthermore, a significant fraction of pandemic-related costs, including the costly testing program, will likely be refunded through federal stimulus packages. Finally, FY21 is likely to end with a sizable surplus, consistent with the budgeted \$8M-\$11M, even if the federal funds aren't received and booked until FY22. A very bright future indeed.

In this context, the undersigned faculty are extremely concerned about the lack of a clear plan to compensate faculty and staff for the loss of income due to austerity measures implemented last year. These measures included an unprecedented halt to retirement-fund payments and a salary freeze, the second in the past 15 years. Only relatively few other institutions enacted similar austerity measures and many of these have already fully and retroactively restored retirement benefits and salary increases (e.g. University of Michigan, George Washington University, Northwestern and Johns Hopkins). We sincerely hope that our institution will very soon follow this path.

We request that a plan be developed and presented to the faculty and the Board for full retroactive reinstitution of plan A contributions and lost compensation due to the salary freeze in FY21. If this is legally impossible, other solutions for complete compensation for the lost income due to suspended retirement contributions and salary freeze should be considered and the best one implemented. Given that partial restitution of these large income cuts would still have marked adverse long-term consequences for personal faculty finances, full restitution is a matter of great importance not just to us but to the University. Especially in light of the brightened national outlook, we also feel that it is critical to avoid the impression that cuts to faculty or staff compensation are the "go to" remedy for financial difficulties of our institution, a notion that would reflect extremely negatively on the University's commitment to faculty, on its prospects to recruit and retain talent, and on its reputation.

We thank you for your consideration and look forward to hearing from you.

The signatories (see next pages) 615* Faculty of Case Western Reserve University with primary appointments in University departments have signed this letter (*5/15: late signees and a correction - one signee asked their name to be removed-, the total was revised to 622)

cc. Chair of the Board of Trustees DiSanto
Incoming President Kaler
Chair of the Faculty Senate Voss
Chair of the Faculty Senate Finance Committee Peck
Chair of University Budget Committee Manor (advisory committee to Provost and CFO)
Chair of the Staff Advisory Committee Seneff (note that this committee has endorsed this letter)

Signees of Faculty letter concerning retroactive Plan A compensation & salary increase listed alphabetically

622 of ~920 faculty with primary appointments in CWRU departments signed the Letter (Staff and Emeritus as well as Research Professors were not e-mailed/did not sign)

Last Name	First Name	School/Department
Abbott	Karen	CAS/Biology
Abbott	Derek	CSOM/Pathology
Adams	Henry	CAS/Art History and Art
Adkins	Evelyn	CAS/Classics
Adler	Jonathan	Law School
Adoro	Stanley	CSOM/Pathology
Akkus	Ozan	CSE/Mechanical and Aerospace Engineering
Albert	Jeffrey	CSOM/Pop. Quant. Health Sci.
Alemagno	Mario	Dental School
Alfes	Celeste	Nursing School
Ali	Mohsin	Dental School/Comprehensive Care
Almoghrabi	Hannoud	Nursing school
Aminoshariae	Anita	Dental School/Endodontics
Andy	Podgurski	CSE/Computer and Data Sciences
Arvidson	Ryan	CSOM/Biochemistry
Assad	Mary	CAS/English
Assaf	Hussein	Dental School/Comprehensive Care
Atit	Radhika	CAS/Biology
Bachmann	Richard	CSE/Mechanical and Aerospace Engineering
Bach-Van Valkenburgh	Elizabeth	MSASS
Backus	Amy	UGEN/Physical Education and Athletics
Bagby	Sarah	CAS/Biology
Baker	Kristian	CSOM/Genetics and Genome Sciences
Balasubramaniam	R.	CSE/Mechanical and Aerospace Engineering
Beale	Bobbie	MSASS/Begun Center
Beall	Cynthia	CAS/Anthropology
Bebek	Gurkan	CSOM/Nutrition
Beckwith	Karen	CAS/Political Science
Bendik-Keymer	Jeremy	CAS/Philosophy
Benza	Michael	Law School
Berezovsky	Jesse	CAS/Physics
Bernhofer	Esther	Nursing School
Bilimoria	Diana	WSOM/Organizational Behavior
Bissada	Nabil	Dental School/Periodontics
Black	Tim	CAS/Sociology
Bohan	Christopher	CAS/Theater

Borawski	Elaine	CSOM/Nutrition
Boyatzis	Richard	WSOM/Organizational Behavior
Brady-Kalnay	Susann	CSOM/Molec. Biology and Microbiology
Braun	Karen	WSOM/Accountancy
Briggs	Farren	CSOM/Pop. Quant. Health Sci
Broich	John	CAS/History
Brown	Robert	CAS/Physics
Bruchez	Anna	CSOM/Pathology
Brunengraber	Henri	CSOM/Nutrition
Bryan	Singelyn	CSOM/Anatomy
Brynjarsdottir	Jenny	CAS/Math., Applied Math., and Statistics
Buchanan	George Richard	WSOM/Design & Innovation
Buchner	David	CSOM/Genetics and Genome Sciences
Buck	Matthias	CSOM/Physiology and Biophysics
Burda	Clemens	CAS/Chemistry
Burden-Gulley	Susan	CAS/Biology
Burns	Jean	CAS/Biology
Bush	William	CSOM/Pop. Quant. Health Sci.
Butler	Jennifer	CAS/Psychological Sciences
Calandruccio	Lauren	CAS/Psychological Sciences
Calvetti	Daniela	CAS/Math., Applied Math., and Statistics
Cameron	Mark	CSOM/Pop. Quant. Health Sci.
Caner	Edward	CAS/Physics
Cao	Kaixiang	CSOM/Biochemistry
Capadona	Jeffrey	CSE/Biomedical Engineering
Caplan	Arnold	CAS/Biology
Carey	Paul	CSOM/Biochemistry
Carnish	Carli	Nursing School
Carter	Beth	CAS/Modern Language and Literature
Carter	Jennifer	CSE/Materials Science and Engineering
Case	Susan	WSOM/Organizational Behavior
Caterinacci	Denise	CAS/Modern Language and Literature
Cavusoglu	M. Cenk	CSE/Elec., Comp. and Systems Engineering
Chakravarty	Leena	CAS/Biology
Chapman	Katharine	Nursing School
Charnofsky	Eric	CAS/Music
Chatterjee	Sayan	WSOM/Design & Innovation
Chaudhary	Vipin	CSE/Computer and Data Sciences
Chen	Shu	CSOM/Pathology
Cheryl	Thompson	CSOM/Nutrition
Cheryl	Cameron	CSOM/Nutrition
Chilton	Eric	CAS/English
Chottiner	Gary	CAS/Physics

Chupp	Mark	MSASS
Ciampaglia	Steve	CAS/Art History and Art
Ciccia	Angela	CAS/Psychological Sciences
Clingingsmith	David	WSOM/Economics
Clune	Michael	CAS/English
Cobb	Brian	CSOM/Pathology
Cobb	Tianna	UGEN/Physical Education and Athletics
Coen	Corinne	WSOM/Organizational Behavior
Cohen	Harlow	WSOM/Organizational Behavior
Colares	Juscelino F.	Law School
Conlon	Ronald	CSOM/Genetics and Genome Sciences
Connamacher	Harold	CSE/Computer and Data Sciences
Connell	Arin	CAS/Psychological Sciences
Cooke Bailey	Jessica	CSOM/Pop. Quant. Health Sci.
Copertari	Gabriela	CAS/Modern Language and Literature
Copi	Craig	CAS/Physics
Cowart	Georgia	CAS/Music and English
Crampton	David	MSASS
Crawford	Dana	CSOM/Pop. Quant. Health Sci
Crespo	Carlos	CAS/Chemistry
Croft	Darin	CSOM/Anatomy
Crofton	Andrew	CSOM/Anatomy
Croniger	Colleen	CSOM/Nutrition
Crown	Nicole	CAS/Biology
Cupar	Jennifer	Law School
Curtis	Jacqueline	CSOM/Pop. Quant. Health Sci.
Curtis	Andrew	CSOM/Pop. Quant. Health Sci.
Cynthia	Hatcher	CSE/Elec., Comp., and Systems Engineering
Dai	Xinghong	CSOM/Physiology and Biophysics
Daley	Margaret	CAS/Modern Language and Literature
Daltorio	Kathryn	CSE/Mechanical Engineering
Damato	Elizabeth	Nursing School
Dannefer	Dale	CAS/Sociology
Davis	Jill	CAS/Theater
de Boer	Piet	CSOM/Molec. Biology and Microbiology
De Guire	Mark	CSE/Materials Science and Engineering
Deal	William	CAS/Cognitive Science
Dealwis	Chris	CSOM/Pharmacology
Debeljak	Greg	UGEN/Athletics
Debra	McGivney	CSOM/Biomedical Engineering
Decker	Michael	CSOM/Physiology and Biophysics
Deimling	Gary	CAS/Sociology
Demaree	Heath	CAS/Psychological Sciences

Deneris	Evan	CSOM/Neurosciences
Desai	Amar	Cancer Center
Diamond	Sarah	CAS/Biology
Dimitropoulos	Anastasia	CAS/Psychological Sciences
Doho	Gilbert	CAS/Modern Language and Literature
dolansky	mary	Nursing School
Douglas	Sara	Nursing School
Driscoll	Diana	CAS/Physics
Drummond	Colin	CSE/Biomedical Engineering
Drushel	Richard	CAS/Biology
Dubaniewicz	Amelia	Dental School/Comprehensive care
Dubyak	George	CSOM/Physiology and Biophysics
Dunn	Liam	Law School
Duval	Christine	CSE/Chem. and Biomol. Engineering
Edguer	Marjorie	MSASS
Emmons	Kimberly	CAS/English
Epell	Steven	CSE/Biomedical Engineering
Erdmans	Mary	CAS/Sociology
Ernest	Jonathan	WSOM/Economics
Ernsberger	Paul	CSOM/Nutrition
Evenden	Jeremy	MSASS
Exline	Julie	CAS/Psychological Sciences
Exner	Agata	CSOM/Radiology
Farkas	Kathleen	MSASS
Fawcett	Cara	Dental School/Comprehensive Care
Feeny	Norah	CAS/Psychological Sciences
Fink	Stephen	Cancer Center
Fischer	Rob	MSASS
Fitzpatrick	Joyce	Nursing School
Flannery	Daniel	MSASS
Flint	Christopher	CAS/English
Flores	John	CAS/History
Flynn	Karen	MSASS
Fogarty	Timothy	WSOM/Accountancy
Fox	Jessica	CAS/Biology
Frank	Scott	CSOM/Pop. Quant. Health Sci.
Freedman	Darcy	CSOM/Pop. Quant. Health Sci.
French	Shannon	CAS/Philosophy
Friel	David	CSOM/Neurosciences
Fu	Pingfu	CSOM/Pop. Quant. Health Sci
Galbraith	Gary	CAS/Dance
Galeski	Janine	Nursing School
Gao	Xuan	CAS/Physics

Garfield	James	UGEN/Physical Education and Athletics
Garvin	Jeffrey	CSOM/Physiology and Biophysics
Geller	Jay	CAS/History
Gentry	Hollie	Nursing School
Gerhard	Scott	MSASS
Gerken	Thomas	CSOM/Biochemistry
Gertsman	Elina	CAS/Art History and Art
Ghannoum	Mahmoud	CSOM/Dermatology
Ghosh	Santosh	Dental School/Biological Sciences
Golczak	Marcin	CSOM/Pharmacology
Goldberg	Michael	WSOM/Design & Innovation
Goldmark	Daniel	CAS/Music
Goldstein	Melvyn	CAS/Anthropology
Goodman	Wendy	CSOM/Pathology
Gordon	Richard	Law School
Gott	Jonatha	CSOM/Biochemistry
Gran	Brian	CAS/Sociology
Gray	Thomas	CAS/Chemistry
Greksa	Lawrence	CAS/Anthropology
Grimberg	Brian	CSOM/Pathology
Grimm	Mary	CAS/English
Groza	Victor	MSASS
Guo	Weihong	CAS/Math., Applied Math., and Statistics
Gupta	Anurag	WSOM/Banking and Finance
Gurarie	David	CAS/Math., Applied Math., and Statistics
Gurkan	Burcu	CSE/Chem. Biomolecular Engineering
Gurkan	Umut	CSE/Mechanical and Aerospace Engineering
Gurski	Nick	CAS/Math., Applied Math., and Statistics
Gustaferro	Richard	Dental School
Gustafson	Kenneth	CSE/Biomedical Engineering
Hagiwara	Takao	CAS/Modern Language and Literature
Haines	Jonathan	CSOM/Pop. Quant. Health Sci.
Hand	Rosa	CSOM/Nutrition
Hardaway	Ayesha	Law School
Hardin	Heather	Nursing School
Harris	Ann	CSOM/Genetics and Genome Sciences
Harris	Stephanie	CSOM/Nutrition
Harte	Peter	CSOM/Genetics and Genome Sciences
Harvey	Ralph	CAS/Earth, Environ. and Planetary Sci.
Hatsuo	Ishida	CSE/Macromol. Sci. and Engineering
Hauck	Steven	CAS/Earth, Environ., and Planetary Sci.
Haufe	Chris	CAS/Philosophy
Hayes	Me'Chelle	Nursing School

Haynesworth	Stephen	CAS/Biology
Haywood	Valerie	CAS/Biology
Heather	Broihier	CSOM/Neurosciences
Helton	Benjamin	CAS/Music
Hengehold	Laura	CAS/Philosophy
Herin	Angelina	CAS/Theater
Hinczewski	Michael	CAS/Physics
Hinterbichler	Kurt	CAS/Physics
Hinze	Susan	CAS/Sociology
Hodges	Craig	CSOM/Genetics and Genome Sciences
Hodgetts	Matthew	CAS/Political Science
Hoffer	Lee	CAS/Anthropology
Hoffman	Sharona	Law School
Hoffman	Heather	MSASS/CEBP
Holmes	Megan	MSASS
Honsky	Jesse	Nursing School
Hopkins	Julie	Nursing School
Horn	Mary Ann	CAS/Math., Applied Math., and Statistics
Horvath	Kathleen	CAS/Music
Hoskin	Jessica	Nursing School
Hostler	Stephen	CSE/Mechanical and Aerospace Engineering
Howe	Justine	CAS/Religious Studies
Huang	Ming-Chun	CSE/Elec., Comp., and Systems Engineering
Huang	Stanley	CSOM/Pathology
Huichun	Zhang	CSE/Civil and Environm. Engineering
Hurley	Michael	CAS/Math., Applied Math., and Statistics
Hussey	David	MSASS
Iannadrea	Jean	Dental School/Comprehension Care
Inouye	Kevin	CAS/Theater
Irina	Pikuleva	CSOM/ Ophthalm. and Visual Sciences
Iversen	Paul	CAS/Classics
Iyengar	Sudha	CSOM/Pop. Quant. Health Sci.
Izen	Steven	CAS/Math., Applied Math., and Statistics
Jack	Anthony	CAS/Philosophy
Jackson	Mark	CSOM/Pathology
Jackson	Molly	Nursing School
Jaffe	Daniel	Law School
James	Spilsbury	CSOM/Pop. Quant. Health Sci.
Janesh	Bill	CAS/Astronomy
Jankowsky	Eckhard	CSOM/Biochem., Centr for RNA & Therap.
Janna	Kiselar	CSOM/Nutrition
Jasinevicius	Theresa	Dental School
Jastrzebska	Beata	CSOM/Pharmacology

Jenkins	Michael	CSOM/Biomedical Engineering
Jenkins	Denver	Dental School/Comprehensive Care
Jewell	Megan	CAS/English
Jin	Ge	Dental School/Biological Sciences
Jolly	Emmitt	CAS/Biology
Jones	Stephen	CSOM/Physiology and Biophysics
Joseph	Jay	Dental School/Comprehensive Care
Juniper	Kathleen M	Nursing School
Juratovac	Evanne	Nursing School
Kabirian	Alireza	WSOM/Operations
Kahana	Eva	CAS/Sociology
Kao	Hung-Ying	CSOM/Biochemistry
Karakurt	Gunnur	CAS/Psychiatry
Karathanasis	Stathis	CSOM/Biomedical Engineering
Karn	Jonathan	CSOM/Molec. Biology and Microbiology
Kash	Kathleen	CAS/Physics
Katz	David	CSOM/Neurosciences
Kay	McNeal	CAS/Psychological Sciences
Kazemian	Pooyan	WSOM
Kelley	Jessica	CAS/Sociology
Kelling	Connie	Nursing School
Kharangate	Chirag	CSE/Mechanical and Aerospace Engineering
Killion	Cheryl	Nursing School
Kim	Chin-Tai	CAS/Philosophy
Kim-Mozeleski	Jin	CSOM/Pop. Quant. Health Sci.
Kisley	Lydia	CAS/Physics
Knighton	Shanina	Nursing School
Knox	Peter	CAS/Classics
Koenigsberger	Kurt	CAS/English
Kolosionek	Jerry S	Dental School/Comprehensive Care
Kong	Qingzhong	CSOM/Pathology
Koops	Lisa	CAS/Music
Korbin	Jill	CAS/Anthropology
Korsmo	Charles	Law School
kostritsky	juliet	Law School
Koyuturk	Mehmet	CSE/Computer and Data Sciences
Kraus	Allison	CSOM/Pathology
Kretschmar	Jeff	MSASS
Kruszynski	Richard	MSASS
Ku	Raymond	Law School
Kube	Dianne	CAS/Biology
Kuemerle	Barbara	CAS/Biology
Lacks	Daniel	CSE/Chem. Biomolecular Engineering

LaFramboise	Thomas	CSOM/Genetics and Genome Sciences
Lagerlof	Peter	CSE/Materials Science and Engineering
LaManna	Joseph	CSOM/Physiology and Biophysics
Lambrecht	Walter	CAS/Physics
Landau	Uziel	CSE/Chem. Biomolecular Engineering
Landers	Michael	Dental School
Lanese	Kathleen	UGEN/Physical Education and Athletics
Langer	Joel	CAS/Math., Applied Math., and Statistics
Lathers	Marie	CAS/Modern Language and Literature
Lavelle	Kathryn	CAS/Political Science
Ledford	Kenneth	CAS/History
Lee	Irene	CAS/Chemistry
Lee	Zhenghong	CSOM/Radiology
Leitman	Marshall	CAS/Math., Applied Math., and Statistics
Levine	Alan	CSOM/Molec. Biology and Microbiology
Lewandowski	John	CSE/Materials Science and Engineering
Lewicki	Michael	CSE/Computer and Data Sciences
Li	Yue	CSE/Civil and Environm. Engineering
Li	Jing	CSE/Computer and Data Sciences
Li	Bo	CSE/Mechanical and Aerospace Engineering
Li	Xiao	CSOM/Biochemistry
Liang	Fu-Sen	CAS/Chemistry
Liao	Ya-Ting	CSE/Mechanical and Aerospace Engineering
Licatalosi	Donny	CSOM/Biochemistry
Lin	Wei	CSE/Elec., Comp. and Systems Engineering
Lincoln	Sarah Hope	CAS/Psychological Sciences
Lindell	Deborah	Nursing School
Liu	Chung Chiun	CSE/Chem. Biomolecular Engineering
Lodowski	David	CSOM/Nutrition
Lolli	Greggory	UGEN/Physical Education and Athletics
Loparo	Kenneth	CSE/Elec., Comp. and Systems Engineering
Lou	Hua	CSOM/Genetics and Genome Sciences
Loue	Sana	CSOM/Bioethics
Lovell	Rachel	MSASS
Lower	Amy	Nursing School
Lu	Zheng-Rong	CSE/Biomedical Engineering
Luck	Richard	CAS/Astronomy
Ludington	Susan	Nursing School
Lyytinen	Kalle	WSOM/Design & Innovation
MacDonald	Paul	CSOM/Pharmacology
Macnamara	Brooke	CAS/Psychological Sciences
Madabhushi	Anant	CSE/Biomedical Engineering
Mahabaleshwar	Ganapati	CSOM/Pathology

Maia	Joao	CSE/Macromol. Sci. and Engineering
Malankooti	Behnam	CSE/Elec., Comp. and Systems Engineering
Manas-Zloczower	Ica	CSE/Macromol. Sci. and Engineering
Mansfield	Cathy	Law School
Mark	Aulisio	CSOM/Bioethics
Markt	Sarah	CSOM/Pop. Quant. Health Sci.
Marling	William	CAS/English
Martin	Ryan	CAS/Biology
Martin	Ina	CAS/Physics
Mathur	Kamlesh	WSOM
Matreyek	Kenneth	CSOM/Pathology
Matthiesen	David	CSE/Materials Science and Engineering
Maxwell	Brian	CSE/Mechanical and Aerospace Engineering
Mazanec	Susan	Nursing School
McCall	Peter	CAS/Earth, Environ., and Planetary Sci.
McClary	Susan	CAS/Music
McConnell	Kelly	Nursing School
McDonald	Patricia	Nursing School
McEnery	Maureen	CSOM/Neurology
McGee	Shanna Beth	CAS/Theater
McGrath	Janet	CAS/Anthropology
McIntyre	Cameron	CSOM/Biomedical Engineering
McMann	Kelly	CAS/Political Science
McManus	Catherine	CSOM/Nutrition
McMunigal	Kevin	Law School
McMunigal	Kevin	Law School
Mears	Jason	CSOM/Pharmacology
Mehregany	Mehran	CSE/Elec., Comp. and Systems Engineering
Mercer	Kathryn	Law School
Merrick	William	CSOM/Biochemistry
Messer	Tracey	WSOM/Organizational Behavior
Meyer	Drew	CAS/Chemistry
Michael	Zagorski	CAS/Chemistry
Michael	Pollino	CSE/Civil and Environm. Engineering
Michie	Marsha	CSOM/Bioethics
Mihos	Chris	CAS/Astronomy
Miller IV	Warren	UGEN/Physical Education and Athletics
Minnes	Sonia	MSASS
Miri Lavasani	Seyed Hossein	CSE/Elec., Comp. and Systems Engineering
Miron	Alexander	CSOM/Genetics and Genome Sciences
Miyagi	Masaru	CSOM/Pharmacology
Mizutani	Claudia	CAS/Biology
Mohseni	Pedram	CSE/Elec., Comp., and Systems Engineering

Monagan	Thomas	CAS/Physical Education and Athletics
Mondal	Anirban	CAS/Math., Applied Math., and Statistics
Monnier	Vincent	CSOM/Pathology
Montano	Monica	CSOM/Pharmacology
Moore	Pete	CAS/Political Science
Moss	Fraser	CSOM/Physiology and Biophysics
Mu	Tingwei	CSOM/Physiology and Biophysics
Mulheren	Rachel	CAS/Psychological Sciences
Nambisan	Satish	WSOM
Nance	Dale	Law School
Nanfito	Jacqueline	CAS/Modern Language and Literature
Nedelcu	Cristina	MSASS
Neil	Greenspan	CSOM/Pathology
Nelson	Suchitra	Dental School/Community Dentistry
Newmeyer	Casey	WSOM/Design & Innovation
Nguyen	Ann	MSASS
Nicholson	Jennifer	Nursing School
Niraj	Rakesh	WSOM
Nisenbourn	Jean	CAS/Psychological Sciences
Nock	Nora	CSOM/Pop. Quant. Health Sci.
Oakley	Todd	CAS/Cognitive Science
Obeid	Rita	CAS/Psychological Sciences
Occhipinti	Rossana	CSOM/Physiology and Biophysics
O'Connell	Grant	Nursing School
Olbricht	Erika	CAS/English
Orlock	John	CAS/English
Osei-Owusu	Patrick	CSOM/Physiology and Biophysics
Overholser	James	CAS/Psychological Sciences
Overman	Laura	MSASS/Begun Center
Ozlem	Tulunoglu	Dental School/Pediatric Dentistry
Pandiyani	Pushpa	Dental School/Biological Sciences
Park	Eunyoung	CAS/Art History and Art
Parker	Shane	CAS/Chemistry
Parrill	Fey	CAS/Cognitive Science
Paul	Park	CSOM/ Ophthalm. and Visual Sciences
Pearson	Anthony	CAS/Chemistry
Perzanowski	Aaron	Law School
Philippidou	Pola	CSOM/Neurosciences
Phillips	Nelson	CSOM/Biochemistry
Pignatiello	Grant	Nursing School
Pink	John	Cancer Center
Pittman Claytor	Cassi	CAS/Sociology
Pizarro	Theresa	CSOM/Pathology

Popkin	Maggie	CAS/Art History and Art
Posner	Elliot	CAS/Political Science
Potter	Karen	CAS/Dance
Prince	Dana	MSASS
Protasiewicz	John	CAS/Chemistry
Przeworski	Amy	CAS/Psychological Sciences
Punales-Alpizar	Damaris	CAS/Modern Language and Literature
Pusztai-Carey	Marianne	CSOM/Biochemistry
Qi	Xin	CSOM/Physiology and Biophysics
Quinn	Roger	CSE/Mechanical and Aerospace Engineering
Rager	Andrea	CAS/Art History and Art
Ramachandran	Rajesh	CSOM/Physiology and Biophysics
Ramakrishnan	Parameswaran	CSOM/Pathology
Ramanujam	Vasudevan	WSOM/Design & Innovation
Reddy	Mohan	WSOM
Renner	Julie	CSE/Chem. Biomolecular Engineering
Reshmi	Parameswaran	CSOM/Dept. of Medicine
Ricchetti	Paul	Dental School/Periodontics
Riley-Behringer	Maureen	MSASS
Rimnac	Clare	CSE/Mechanical and Aerospace Engineering
Robertson	Cassandra	Law School
Rodionov	Valentin	CSE/Macromol. Sci. and Engineering
Rollins	Andrew	CSE/Biomedical Engineering
Rolock	Nancy	MSASS
Romaniuk	J Richard	MSASS
Roperto	Renato	Dental School/Comprehensive Care
Rosenblatt	Charles	CAS/Physics
Rossoff	Lawrence	Dental School
Rothenberg	Kathryn	CAS/Psychological Sciences
Rothman	Aviva	CAS/History
Ruhl	John	CAS/Physics
Rumor	Maddalena	CAS/Classics
Saab	Daniel	CSE/Elec., Comp. and Systems Engineering
Sadowsky	Jonathan	CAS/History
Safar	Jiri	CSOM/Pathology
Sahoo	Satya	CSOM/Pop. Quant. Health Sci.
Salas Atwell	Meghan	MSASS
Salerno	Matthew	Law School
Salz	Helen	CSOM/Genetics and Genome Sciences
Sam	Senyo	CSOM/Biomedical Engineering
Samia	Anna Cristina	CAS/Chemistry
Sarma	Deepak	CAS/Religious Studies
Sauve	Genevieve	CAS/Chemistry

Savinell	Robert	CSE/Chem. Biomolecular Engineering
Saylor	Beverly	CAS/Earth, Environ. and Planetary Sci.
Scacheri	Peter	CSOM/Genetics and Genome Sciences
Scallen	Catherine	CAS/Art History and Art
Schaffer	Martha	CAS/English
Schaffer	Ashleigh	CSOM/Genetics and Genome Sciences
Scherson	Daniel	CAS/Chemistry
Schiemann	William	Cancer Center
Schilling	William	CSOM/Physiology and Biophysics
Schiltz	Nicholas	Nursing School
Schmidt	Bryan	CSE/Mechanical and Aerospace Engineering
Schneider	James	Dental School/Comprehensive Care
Scott	Jerrold	CAS/Theater
Sehirlioglu	Alp	CSE/Materials Science and Engineering
Sen Gupta	Anirban	CSE/Biomedical Engineering
Sentilles	Renée	CAS/History
Shane	Scott	WSOM/Economics
Shaffer	Jim	CAS/Anthropology
Shepler	Richard	MSASS/Begun Center
Sheremeta	Roman M.	WSOM
Shi	Lihong	CAS/Anthropology
Shirai	Yasuhiro	CAS/Cognitive Science
Shive	Carey	CSOM/Pathology
Shoag	Dan	WSOM/Economics
Shoffstall	Andrew	CSE/Biomedical Engineering
Short	Elizabeth	CAS/Psychological Sciences
Silver	Jerry	CSOM/Neurosciences
Singer	David	CAS/Math., Applied Math., and Statistics
Singer	Kenneth	CAS/Physics
Singer	Lynn	CSOM/Pop. Quant. Health Sci
Singer	Mendel	CSOM/Pop. Quant. Health Sci.
Singer	Mark	MSASS
Singh	Neena	CSOM/Pathology
Singh	Jagdip	WSOM/Design & Innovation
Smith	Corey	CSOM/Physiology and Biophysics
Smith	Eric	Dental School/Comprehensive Care
Smith	Todd	Nursing School
Snider	Martin	CSOM/Biochemistry
Snyder	Robin	CAS/Biology
Solow	Daniel	WSOM
Somersalo	Erkki	CAS/Math., Applied Math., and Statistics
Song	Yeunjoo	CSOM/Pop. Quant. Health Sci.
Srinivasan	Rekha	CAS/Chemistry

Starkman	Glenn	CAS/Physics
Stein	Cathy	CSOM/Pop. Quant. Health Sci.
Steinberg	Ted	CAS/History
Stelzer	Julian	CSOM/Physiology and Biophysics
Stephens	John Paul	WSOM/Organizational Behavior
Sternberg	Rachel	CAS/Classics
Stewart	Phoebe	CSOM/Pharmacology
Still	Carolyn	Nursing School
Stojanov	Ivan	Dental School/Oral Medicine
Strangi	Giuseppe	CAS/Physics
Strassfeld	Robert	Law School
Strowbridge	Ben	CSOM/Neurosciences
Strychalski	Wanda	CAS/Math., Applied Math., and Statistics
Sudha	Chakrapani	CSOM/Physiology and Biophysics
Sun	Qian	CSOM/Neurosciences
Surewicz	Witold	CSOM/Physiology and Biophysics
Svetlana	Morozova	CSE/EMAC
Sy	Man-Sun	CSOM/Pathology
Tabuchi	Masashi	CSOM/Neurosciences
Tajima	Nami	CSOM/Physiology and Biophysics
Takao	Hagiwara	CAS/Modern Language and Literature
Tan	Jonathan	CAS/Religious Studies
Tartakoff	Laura	CAS/Political Science
Tartakoff	Alan	CSOM/Pathology
Tatsuoka	Curtis	CSOM/Pop. Quant. Health Sci.
Taylor	Philip	CAS/Physics
Taylor	Cyrus	CAS/Physics
Taylor	Derek	CSOM/Pharmacology
Taylor	Jessica	CSOM/Physiology and Biophysics
Tesar	Paul	CSOM/Genetics and Genome Sciences
Thomas	Peter	CAS/Math., Applied Math., and Statistics
Tisch	Daniel	CSOM/Pop. Quant. Health Sci.
Tiwari	Pallavi	CSOM/Biomedical Engineering
Tobin	Vera	CAS/Cognitive Science
Toly	Valerie	Nursing School
Tossone	Krystel	MSASS
Townsend	Aloen	MSASS
Trapl	Erika	CSOM/Pop. Quant. Health Sci.
Triolo	Ronald	CSOM/Biomedical Engineering
Tulunoglu	Ibrahim	Dental School
Turner	Jack	Law School
Turner	Mark	UGEN
Umrigar	Thrity	CAS/English

Vairaktarakis	George	WSOM/Operations
van den Akker	Focco	CSOM/Biochemistry
Van Orman	James	CAS/Earth, Environ. and Planetary Sci.
Vees-Gulani	Susanne	CAS/Modern Language and Literature
Vegh	David	CAS/Theater
Veigl	Martina	Cancer Center
Victoroff	Kristin	Dental School/Community Dentistry
Vinter	Maggie	CAS/English
Viswanath	Satish	CSOM/Biomedical Engineering
Voith	Laura	MSASS
Von Lintig	Johannes	CSOM/Pharmacology
von Recum	Horst	CSE/Biomedical Engineering
Votrubá	Mark	WSOM/Economics
Vrettos	Athena	CAS/English
Wang	Susan	CSOM/Biochemistry
Wang	Zhenghe	CSOM/Genetics and Genome Sciences
Wang	Wenzhang	CSOM/Pathology
Wang	Yanming	CSOM/Radiology
Ward	Nicole	CSOM/Nutrition
Watowicz	Rosanna	CSOM/Nutrition
Wearsch	Pamela	CSOM/Pathology
Weinberg	Aaron	Dental School/Biological Sciences
Weiss	Gillian	CAS/History
Welsch	Gerhard	CSE/Materials Science and Engineering
Werner	Elisabeth	CAS/Math., Applied Math., and Statistics
Wheaton	Katie	CSE/Civil and Environm. Engineering
Whittingham	Tim	Dental School
Willard	Matthew	CSE/Materials Science and Engineering
Williamson	Patricia	CAS/Math., Applied Math., and Statistics
Willis	Mark	CAS/Biology
Winkelman	Chris	Nursing School
Wise	Jo Ann	CSOM/Biochemistry
Wish-Baratz	Susanne	CSOM/Anatomy
Wolff	Gabriella	CAS/Biology
Wu	Yinghui	CSE/Computer and Data Sciences
Wu	Qi	WSOM
Wutrich	Timothy	CAS/Classics
Wyatt	Newman	CSE/ Elec., Comp., and Systems Engineering
Xiao	Xusheng	CSE/Computer and Data Sciences
Xiao	Tsan	CSOM/Pathology
Xiong	Wen-Cheng	CSOM/Neurosciences
Xiong	Heyu	WSOM/Economics
Xu	Kui	CSOM/Physiology and Biophysics

Yang	Peter	CAS/Modern Language and Literature
Yang	Sichun	CSOM/Nutrition
Yang	Shitao	WSOM/Operations
Ye	Fanny	CSE/Computer and Data Sciences
Yee	Vivien	CSOM/Biochemistry
Yoo	Youngjin	WSOM/Design & Innovation
Youngner	Stuart	CSOM/Bioethics
Yu	Xin	CSE/Biomedical Engineering
Yu	Edward	CSOM/Pharmacology
Yuan	Chris	CSE/Mechanical and Aerospace Engineering
Zabell	Michael	Dental School/Comprehensive Care
Zauszniewski	Jaclene	Nursing School
Zehavi	Idit	CAS/Physics
Zhang	Shulei	CAS/Physics
Zhang	Huichun	CSE/Civil and Environm. Engineering
Zhang	Mei	CSOM/Biomedical Engineering
Zhang	Youwei	CSOM/Pharmacology
Zhao	Longhua	CAS/Math., Applied Math., and Statistics
Zhou	Lan	CSOM/Pathology
Zhu	Lei	CSE/Macromol. Sci. and Engineering
Zhu	Xiaofeng	CSOM/Pop. Quant. Health Sci
Ziats	Nicholas	CSOM/Pathology
Zigmond	Richard	CSOM/Neurosciences
Zimmerman	Peter	CSOM/Pathology
Zimmermann	Elizabeth	Nursing School



CASE WESTERN RESERVE UNIVERSITY

SCHOOL OF MEDICINE

May 9, 2021

Dear President Cowen, Provost Vinson, and Members of the Board of Trustees:

The onset of the SARS-CoV-2 pandemic in January of last year precipitated unprecedented challenges to our University community. These challenges persisted and even intensified at points over the past 15 months, but, thankfully, CWRU appears to be emerging from the pandemic in a sound position. This is due in large part to your excellent leadership, and for this we are grateful. While acknowledging this fact, we write asking you to consider an urgent matter that will significantly impact the faculty's sense of shared governance, faculty and staff morale, and our ability to retain our most outstanding and productive scholars.

One of the emergency measures you took, withholding University contributions to Plan A retirement accounts, was understandably done in the face of the economic uncertainty of the emergent crisis. The faculty accepted the necessity of this at the time given the imminence and extent of the looming threat. It understood that the resources previously committed to Plan A might be needed to weather the impending economic storm. As we know all too well, the human cost of the pandemic, including to members of our University community, is incalculable. Fortunately, the economic impact to the University, however, was not as severe as feared. Indeed, the pandemic did not ultimately necessitate the use of the funds withheld from Plan A contributions as the University is now running a surplus for the fiscal year. Much of the "surplus" is, of course, not a surplus at all but rather the resources that had been previously committed as Plan A contributions for FY21 and then withheld in the face of the crisis. Because it was not necessary to spend the Plan A resources to address the emergency that rightly led to their withholding, they should be returned to honor the commitment that was contingently suspended in the face of crisis. It is our understanding that in combination with the projected remaining contingency funds, this would permit a full restoration of FY21 Plan A funds.

Irrespective of whether there is a legal obligation to return Plan A resources to the faculty, there is clearly an ethical obligation stemming from the value of reciprocity, an implied social contract that is vital to trust and shared governance. When faculty and staff accepted the suspension of Plan A contributions in the face of a potential economic emergency that might demand their use, it was, of course, with the expectation that these resources would be returned to Plan A in the event that the economic emergency did not necessitate their use. Those of us in SOM leadership positions are aware that faculty morale is badly flagging. Indeed, many of us have been approached by some of our most talented and productive faculty with concerns about whether they should remain at CWRU. A failure to return Plan A resources to Plan A will be a devastating blow to already low morale and will likely have severe negative ramifications for our community for years to come. In contrast, a restoration of Plan A resources to Plan A will not only affirm the value of reciprocity, which is essential for trust and shared governance, it will also generate a tremendous amount of goodwill, boosting morale at this critical juncture. Indeed, we are certain that a return of Plan A resources to Plan A will be repaid downstream many times over in retentions and productivity gains, as well as steeling us to meet together future challenges that will inevitably arise.

Sincerely,

The Council of Basic Science Chairs and the Committee on Budget, Finance, and Compensation
Case Western Reserve University School of Medicine

Members listed below

May 9, 2021
CBSC/CBFC

Council of Basic Science Chairs Members:

Mark Aulisio, PhD (CBSC Chair)
Chair, Department of Bioethics

Hope Barkoukis, PhD
Chair, Department of Nutrition

Walter Boron, MD, PhD
Chair, Department of Physiology and Biophysics

J. Alan Diehl, PhD
Chair, Department of Biochemistry

Jonathan Haines, PhD
Chair, Department of Population and
Quantitative Health Sciences

Clifford Harding IV, MD, PhD
Chair, Department of Pathology

Jonathan Karn, PhD
Chair, Department of Microbiology and
Molecular Biology

Robert Kirsch, PhD
Chair, Department of Biomedical Engineering

Lin Mei, PhD
Chair, Department of Neurosciences

Jonathan Smith, PhD
Chair, Department of Molecular Medicine

Kurt Stange, MD, PhD
Director, Center for Community Health Integration

Edward Yu, PhD
Chair, Department of Pharmacology Sciences

Anthony Wynshaw-Boris, MD, PhD
Chair, Department of Genetics and Genome Sciences

Committee on Budget, Finance, and Compensation Members:

Agata A. Exner, PhD (CBFC Chair)
Professor of Radiology and Biomedical Engineering
Departments of Radiology & Biomedical Engineering

Mark P. Aulisio, PhD
Susan E. Watson Professor and Chair
Department of Bioethics

Matthias Buck, DPhil
Professor of Physiology and Biophysics
Department of Physiology and Biophysics

Evan Deneris, PhD
Professor and Vice Chair
Department of Neurosciences

Matthew J. Lester, MBA, MHA
Vice Dean for Finance

Sana Loue, J.D., Ph.D., M.P.H., M.S.S.A.
Professor of Bioethics
Department of Bioethics

Danny Manor, PhD
Associate Professor of Nutrition and Pharmacology
Departments of Nutrition and Pharmacology

William C. Merrick, PhD
Professor of Biochemistry
Department of Biochemistry

Robert A. Salata, MD, FACP, FIDSA
STERIS Chair of Excellence in Medicine
Professor and Chairman
Department of Medicine

Mendel E. Singer, PhD MPH
Associate Professor of PQHS
Dept. of Population and Quantitative Health Sciences

5/20/21

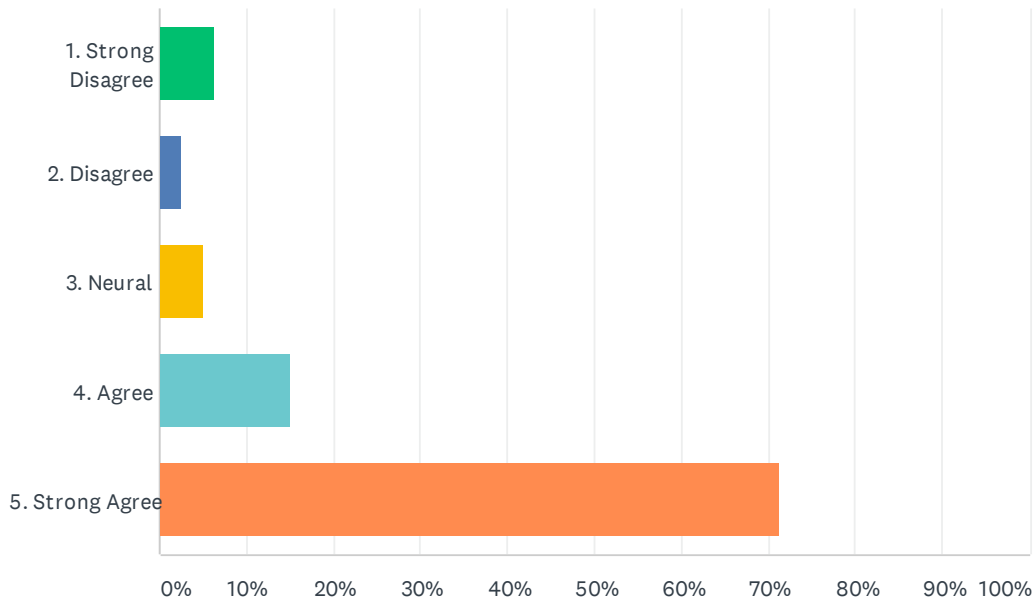
The Faculty Senate urges the Board of Trustees and administration to consider restoration of full funding for Plan A for FY 2021, particularly given the anticipated \$11 million of HEERF III federal funding in FY 2022.

6/1/21

The Emeriti Academy Executive Committee, on behalf of the more than 400 Emeriti of CWRU who have benefitted from uninterrupted University Contributions to the Retirement Plan A, endorses the Resolution of the Faculty Senate of May 20, 2021

Q1 To what extent do you agree with the following statements: "100% of Plan A retirement contributions should be retroactively restored for the 2020-2021 fiscal year." (on a scale from 1 to 5, with 1 = strongly disagree and 5 = strongly agree)

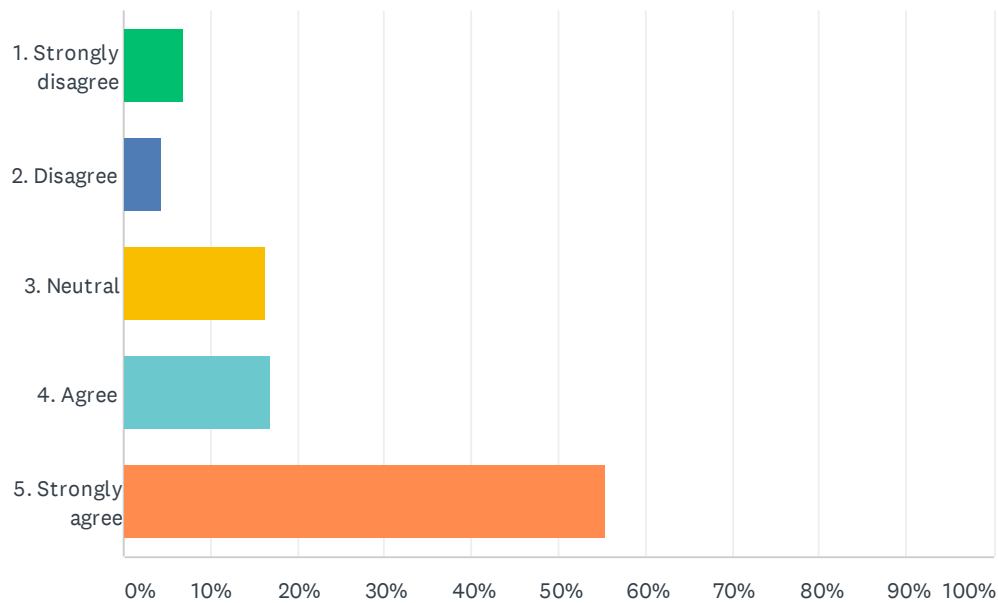
Answered: 160 Skipped: 1



ANSWER CHOICES	RESPONSES	
1. Strong Disagree	6.25%	10
2. Disagree	2.50%	4
3. Neural	5.00%	8
4. Agree	15.00%	24
5. Strong Agree	71.25%	114
TOTAL		160

Q2 To what extent do you agree with the following statements:"A salary increase should be retroactively restored for the 2020-2021 fiscal year."
(on a scale from 1 to 5, with 1 = strongly disagree and 5 = strongly agree)

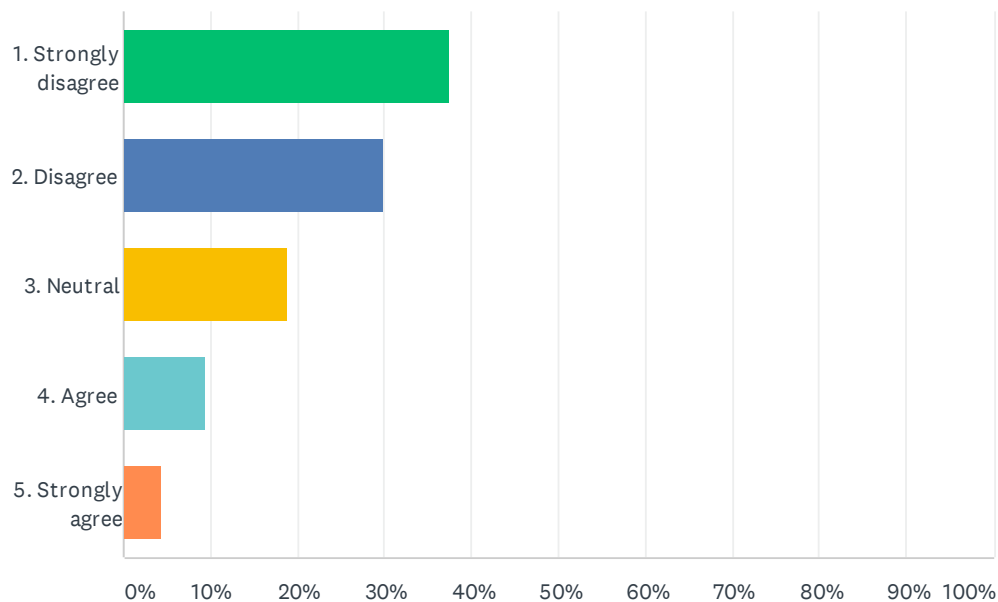
Answered: 159 Skipped: 2



ANSWER CHOICES	RESPONSES	
1. Strongly disagree	6.92%	11
2. Disagree	4.40%	7
3. Neutral	16.35%	26
4. Agree	16.98%	27
5. Strongly agree	55.35%	88
TOTAL		159

Q3 To what extent do you agree with the following statements:"Financial decisions regarding faculty compensation and benefits were made by university leadership in response to COVID-19 were transparent and included faculty input." (on a scale from 1 to 5, with 1 = strongly disagree and 5 = strongly agree)

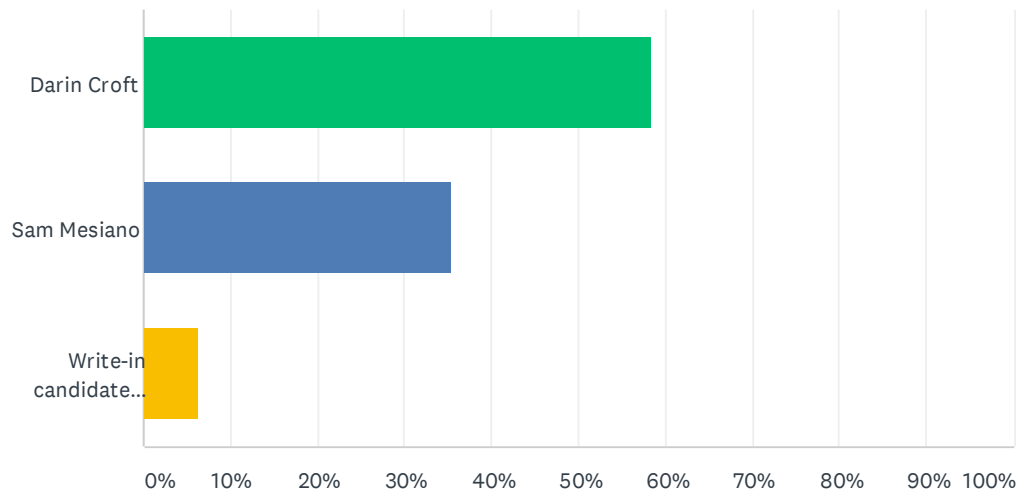
Answered: 160 Skipped: 1



ANSWER CHOICES	RESPONSES	
1. Strongly disagree	37.50%	60
2. Disagree	30.00%	48
3. Neutral	18.75%	30
4. Agree	9.38%	15
5. Strongly agree	4.38%	7
TOTAL		160

Q1 Please vote for Faculty Council Chair-Elect

Answered: 48 Skipped: 2

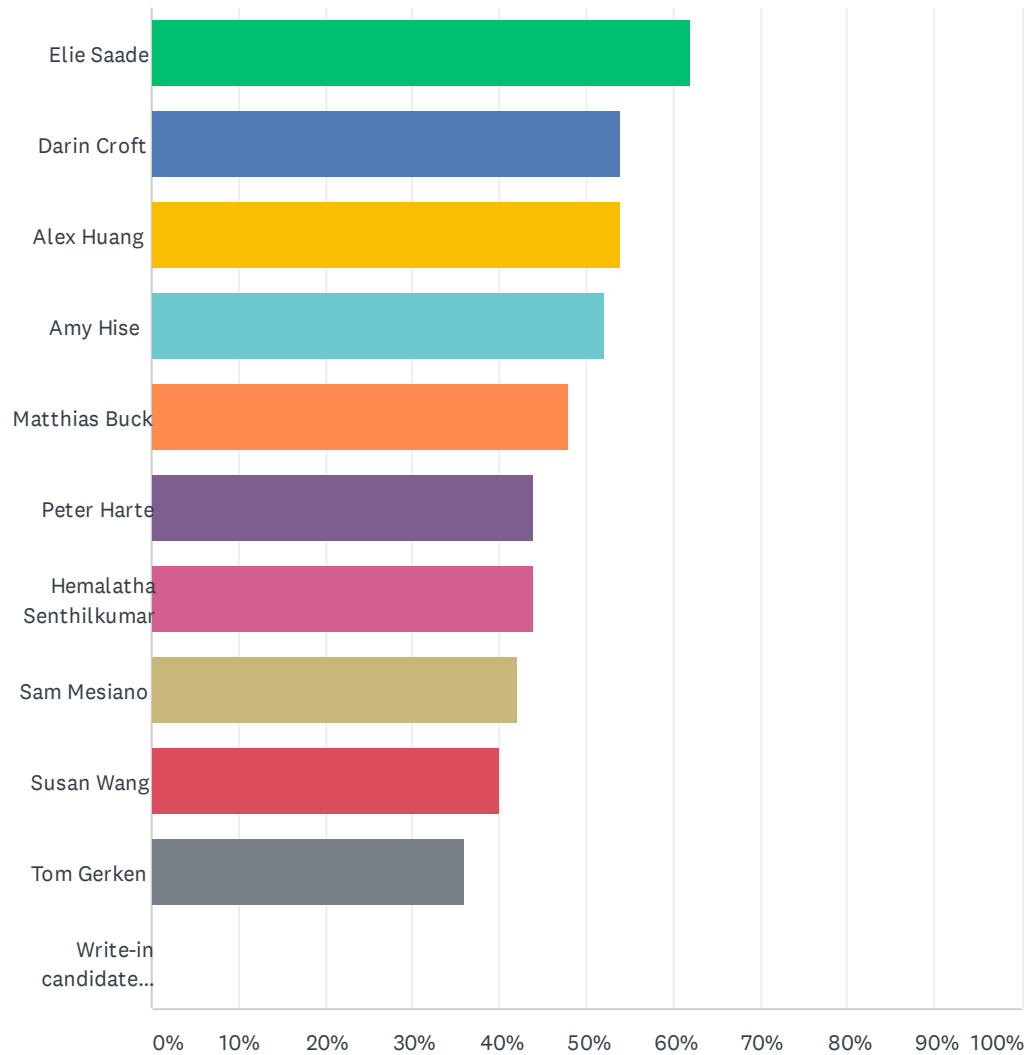


ANSWER CHOICES	RESPONSES
Darin Croft	58.33% 28
Sam Mesiano	35.42% 17
Write-in candidate (please specify)	6.25% 3
TOTAL	48

#	WRITE-IN CANDIDATE (PLEASE SPECIFY)	DATE
1	Henry Boom	5/24/2021 8:16 AM
2	Henry Boom	5/24/2021 8:15 AM
3	Henry Boom	5/24/2021 8:11 AM

Q2 Please vote for Faculty Council Steering Committee (select 6 names)

Answered: 50 Skipped: 0



ANSWER CHOICES	RESPONSES	
Elie Saade	62.00%	31
Darin Croft	54.00%	27
Alex Huang	54.00%	27
Amy Hise	52.00%	26
Matthias Buck	48.00%	24
Peter Harte	44.00%	22
Hemalatha Senthilkumar	44.00%	22
Sam Mesiano	42.00%	21
Susan Wang	40.00%	20
Tom Gerken	36.00%	18
Write-in candidate (please specify)	0.00%	0
Total Respondents: 50		

#	WRITE-IN CANDIDATE (PLEASE SPECIFY)	DATE
	There are no responses.	

Q3 Please vote for Nomination and Elections Committee members from Faculty Council (no candidates identified, you may write-in a candidate's name.

Answered: 12 Skipped: 38

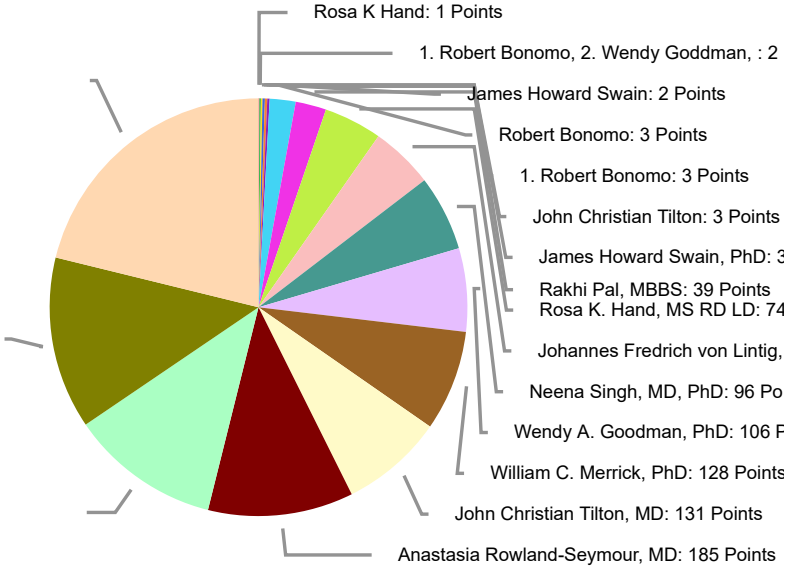
ANSWER CHOICES	RESPONSES	
Write-in candidate	100.00%	12
Write-in candidate	33.33%	4

#	WRITE-IN CANDIDATE	DATE
1	Peter Harte	6/2/2021 2:37 PM
2	Robert A. Bonomo	6/2/2021 1:06 PM
3	Maureen Mcenery	6/2/2021 1:06 PM
4	none	5/30/2021 2:57 PM
5	Jamie Wood	5/28/2021 2:20 PM
6	Keith Armitage	5/24/2021 8:16 AM
7	Maureen McEnery	5/22/2021 11:26 AM
8	Hemalatha Senthilkumar	5/21/2021 3:19 PM
9	Robert Bonomo	5/21/2021 12:45 PM
10	Allison Vidimos	5/21/2021 11:21 AM
11	Peter Harte	5/21/2021 11:05 AM
12	Maureen Mcenery	5/21/2021 10:22 AM
#	WRITE-IN CANDIDATE	DATE
1	none	5/30/2021 2:57 PM
2	Daniel Tisch	5/21/2021 12:45 PM
3	Katherine DiSano	5/21/2021 11:21 AM
4	Marjorie Greenfield	5/21/2021 10:22 AM

Academic Year**Faculty Senate 2021-Three-Year Term for 3 Candidate(s)**

	Name	Detail	Points ¹	Total Votes	Ran...	Ran...	Ran...	
	Robert Bonomo, MD	Department of Medicine (VA)	348	154	237 pts	72 pts	39 pts	
	Michael D. Faulx, MD	Department of Medicine (CCLCM)	219	102	111 pts	86 pts	22 pts	
	Jennifer Michelle McBride, PhD	Department of Surgery (CCLCM)	191	96	75 pts	90 pts	26 pts	
	Anastasia Rowland-Seymour, MD	Department of Medicine (MHMC)	185	82	114 pts	54 pts	17 pts	
	John Christian Tilton, MD	Department of Nutrition (SOM)	131	61	81 pts	32 pts	18 pts	
	William C. Merrick, PhD	Department of Biochemistry (SOM)	128	60	72 pts	40 pts	16 pts	
	Wendy A. Goodman, PhD	Department of Pathology (SOM)	106	58	48 pts	32 pts	26 pts	
	Neena Singh, MD, PhD	Department of Pathology (SOM)	96	53	39 pts	34 pts	23 pts	
	Johannes Fredrich von Lintig, PhD	Department of Pharmacology (SOM)	80	41	42 pts	22 pts	16 pts	
	Rosa K. Hand, MS RD LD	Department of Nutrition (SOM)	74	41	27 pts	30 pts	17 pts	

Rakhi Pal, MBBS	Department of Anesthesiology & Perioperative Medicine (UH)	39	23	6 pts	24 pts	9 pts
James Howard Swain, PhD	Department of Nutrition (SOM)	33	18	15 pts	10 pts	8 pts
Robert Bonomo	Self Selected by e-Vote	3	1	3 pts	0 pts	0 pts
1. Robert Bonomo	Self Selected by e-Vote	3	1	3 pts	0 pts	0 pts
John Christian Tilton	Self Selected by e-Vote	3	1	3 pts	0 pts	0 pts
1. Robert Bonomo, 2. Wendy Goddman,	Self Selected by e-Vote	2	1	0 pts	2 pts	0 pts
James Howard Swain	Self Selected by e-Vote	2	1	0 pts	2 pts	0 pts
Rosa K Hand	Self Selected by e-Vote	1	1	0 pts	0 pts	1 pts
<div>0</div> <div>No items to display</div>						



Point Distribution

Report of School of Medicine Lecture Committee to the Faculty Council

Neil S. Greenspan, Chairperson

Current Lecture Committee Roster:

Drew Adams

Matthias Buck

Alan Tartakoff

Neil Greenspan (chairperson)

Lecture Committee Roster Update:

In the past year, both Diana Ramirez-Bergeron and Xinglong Wang left the University. Kishore Guda rotated off of the Lecture Committee. As of June 30, Neil and Matthias will be rotating off of the Committee. Alan Tartakoff accepted the offer for him to be the new chairperson.

Lecture Committee Meetings in the 2020-2021 Academic Year:

Correspondence among all Committee members by email was used for exploring the credentials of candidates for the upcoming Lectureships and other matters. There were no scheduled in-person or online meetings of the full Lecture Committee during the 2020-2021 academic year.

Speakers for the 2020-2021 Louis A. Bloomfield Memorial and H.M. Hanna Lectures:

H.M. Hanna Lecture

Hans Clevers, Hubrecht Institute and the University of Utrecht

Dr. Clevers was originally invited in late 2018 by Kishore Guda. He accepted our offer with a presumptive date in fall 2020. After the COVID-19 pandemic was underway, Kishore contacted Dr. Clevers to find out if he would be open to doing a lecture via zoom, and Dr. Clevers declined. The Committee may explore inviting him for another academic year.

H.M. Hanna Lecture (Jean-Laurent Casanova, Rockefeller)

Nov 5, 2020

Title: **Inborn Errors of Immunity to SARS-CoV-2**

Host: Neil Greenspan

95 participants online (peak participant count)

Several faculty members and a group of BSTP and MSTP graduate students met online with Dr. Casanova, with each session lasting about 30 minutes.

H.M. Hanna Lecture (Kári Stefánsson, deCODE Genetics)

Feb 2, 2021

Title: **Human diversity in the context of health and disease**

Host: Neil Greenspan

185 participants online (peak participant count)

A group of Genetics graduate students met online with Dr. Stefánsson for about an hour.

Courtney Burton Frontiers of Medicine Lecture (Arlene Sharpe, Harvard) Apr 20, 2021

Title: **Multi-Faceted Functions of the PD-1 Pathway**

Host Stanley Adoro

?? participants (I have sent a query to Dr. Adoro.)

Scheduled: Louis A. Bloomfield Memorial Lecture (Akiko Iwasaki, Yale) Sep 30, 2021

Title: TBD

Host: Neil Greenspan

I have planned to have a group of younger women Case faculty members meet as a group with Dr. Iwasaki who offered only one hour in addition to her lecture.

COS Annual Report to Faculty Council

Susan L. Padrino, MD
Chair, Committee on Students
June 2021

Role of the COS

- Review full scope of student performance
 - Academic
 - Professionalism
- Recommend students for promotion through the curriculum and for graduation
- Determine appropriate interventions for students with academic or professionalism lapses
- Approve extensions beyond one year, or other exceptions to usual curriculum progression

Committee Membership

- Ten- twelve members
- Current membership:
 - 4 women
 - 8 men
 - 1 URM
 - 7 Clinical Science
 - 5 Basic Science

Committee Meetings

- Third Thursdays of the month at 3pm
- Ten to eleven meetings/year

Committee Business

- Ongoing Quality Improvements
 - New Member Orientation in place
 - Annual review from legal office- focus on FERPA, attorney-client privilege, and best practices
 - Adjustment to virtual meetings (with privacy measures in place) during pandemic
 - Standardizing presentations from Society Deans

Student presentations

- Early Concerns
 - Professionalism Working Group manages the initial review, refers students to COS when needed
- Students presented
 - 25 individual students (34 last year)
 - 18 Academic issues (14 last year)
 - 5 Professionalism issues (7 last year)
 - 2 Combined issues (9 last year)
 - 1 Administrative issues (extending a year) (5 last year)
 - 13 male (21 last year)
 - 12 female (13 last year)
 - 1 dismissal (3 last year)
 - 0 repeat 1st year (2 last year)
 - 2 withdrawal (1 last year)

Updates

- Multiple issues each year relate to licensing exams (delays or failures)
- 2 changes to USMLE which may have an impact:
 - USMLE Step 1 is Pass/Fail after January 26, 2022
 - Licensing exams may be taken no more than 4 times starting in July 2021

SOM Nominations and Elections Committee

1. Elections for SOM representatives to the CWRU Faculty Senate

Newly elected (term ends 2024):

Robert Bonomo (348 points/154 votes)

Michael Faulx (219 points/102 votes)

Jennifer McBride (191 points/96 votes)

Continuing:

Peter Harte (2022)

Jeffrey Schelling (2022)

Cynthia Swan Kubu (2022)

Brian Cobb (2023)

Darin Croft (2023)

Alan Levine (2023)

Jo Ann Wise (2023)

2. Elections for SOM Faculty Council

Faculty Council Chair-Elect

1. Darin Croft (28 votes)
2. Sam Mesiano (17 votes)
3. Henry Boom (3 votes) - not valid, Dr. Boom is not a member of Faculty Council

Outcome: Dr. Croft will be the next FC Chair-Elect.

2. Elections for SOM Faculty Council

Steering Committee (five seats; 10 nominees; top five listed)

1. Elie Saade - 31 votes
 2. Alex Huang - 27 votes
 3. Amy Hise - 26 votes
 4. Matthias Buck - 24 votes
-
5. Peter Harte - 22 votes
 5. Hemalatha Senthikumar - 22 votes

Outcome 1: Elie Saade, Alex Huang, Amy Hise and Matthias Buck will all serve on the Steering Committee for the 2021-2022 academic year.

Outcome 2: The NEC voted to carry out the FCSC run-off election at today's meeting between Dr. Harte nad Dr. Senthikumar to determine the 5th seat.

FC should now vote (votes will be reviewed after the meeting to ensure only voting members participated in this election).

2. Elections for SOM Faculty Council

Faculty Council Representatives on NEC (2 seats):

Peter Harte - 2 votes - **did not reply to email requesting consent**

Robert Bonomo - 2 votes - not a member of Faculty Council July 1, **not eligible**

Maureen McEnery - 3 - vote - not a member of Faculty Council July 1, **not eligible**

Keith Armitage - 1 vote - not a member of Faculty Council July 1, **not eligible**

Margorie Greenfield - 1 vote - not a member of Faculty Council July 1, **not eligible**

Allison Vidimos - 1 vote - (terms ends June 2022), **did not accept nomination**

Daniel Tisch - 1 vote (terms ends June 2023), **did not reply to email requesting consent**

Katherine DiSano - 1 vote (terms ends June 2023), accepted nomination

Jamie Wood - 1 vote (terms ends June 2022), accepted nomination

Haemalatha Senthikumar - 1 vote (terms ends June 2022), accepted nomination

Outcome: FC vote for two seats on NEC needed

FC should now vote (votes will be reviewed after the meeting to ensure only voting members participated in this election).

SOM Nominations and Elections Committee

Annual Report

Committee membership:

Stanton L. Gerson, MD Interim Dean, School of Medicine

Jennifer McBride, PhD Chair of Faculty Council, CCLCM Surgery

Nicole Ward, PhD Chair-Elect of Faculty Council – SOM Nutrition

Faculty Representatives (Not on Faculty Council):

Justin Lathia, PhD; CCLCM Mol. Med. (2021)

Sichun Yang, PhD; SOM Nutrition; (2021)

Federico Perez MD; VAMC Medicine (2022)

Faculty Council representatives (NEC term is concurrent with FC term)

Maureen W. McEnery, PhD (Clinical) UH Neurology (2021)

Jo Ann Wise, PhD (Basic Science) SOM GMS (2021)

*Danny Manor, PhD (Basic Science) SOM Nutrition (2023); chair '20-'21

Brian D'Anza, MD (Clinical) UH Otolaryngology (2021)

Meetings: -- Feb. 12; March 18; April 12; May 4; May 13
Remaining communication via email

Business:

1. Elections of SOM representatives to CWRU Faculty Senate
2. Elections of SOM Faculty Council Chair / Steering Committee members
3. Elections of SOM Standing Committees members

SOM Committee on Women and Minority Faculty Annual Report

June, 2021

Members

2020-2021

Amy Hise, MD, MPH, Chair (2022)
Department of Pathology – SOM
Department of Medicine - VA

Aparna Padiyar, MD (2022)
Department of Medicine - UH

~~**Abby Spencer**, MD (2021)
Department of Medicine – CCLCM~~

Komal Sawlani, MD (2022)
Department of Neurology - UH

Mariya Geube, MD (2021)
Department of Anesthesiology - CCLCM

Vanessa Maier, MD, MPH (2023)
Department of Family Medicine-MHMC

Nora Nock, PhD (2023)
Population and Quantitative Health Sciences – SOM

Helen Salz, PhD (2020)
Department of Genetics and Genome Sciences –
SOM

Lynn Singer, PhD (2021)
Population & Quantitative Health Sciences,
Pediatrics, Psychiatry and Psychology – SOM

Cynthia Kubu, PhD (2023)
Department of Neurology – CCLCM

Usha Stiefel, MD (ex officio)
Medicine - VA
Interim Vice Dean for Faculty Development &
Diversity

Susan Padrino, MD (ex officio)
Psychiatry -- UH
President, WFSOM

Activities

- Committee met monthly 2020-21
- Highlights:
 - Met with Interim Dean **Stan Gerson** who presented an overview of the SOM strategies for diversity, reviewed retention plan for URiM trainees and faculty, current DSAP was reviewed.
 - Discussed need for diversity data from CWRU departments and affiliates
 - Discussion of lack of mechanism for reporting or getting help with microaggressions, harassment, and discrimination. Options currently include Title IX office, Office of Equity, Integrity hotline, TABIT (threat assessment – responds in 24hr), CCF Peer Review Professionalism committee. Discussion of various grievance procedures on campus, need for multiple approaches. Current formal grievance process is hierarchical, formal, facilitator/mediated, records are sealed, lack of consequences, not set up to address peer-peer issues. Possible role for Susan Freimark, new Director for Faculty Development.

Activities

- Gave input into COVID survey
- Discussed need for diversity of members and ongoing training of CAPT committee and search committees
- **Cynthia Kubu** updated the committee on the newly approved SOM Professionalism Committee
- **Lia Logio**, Vice Dean for Medical Education introduced herself and discussed the open position of Vice Dean for Diversity and Inclusive Excellence; updated on the ongoing recruitment for the Assistant Dean for Student Diversity and Inclusion; Director of Diversity and Inclusion.
- Presentation and discussion of salary equity with representatives from the SOM Committee on Budget, Finance and Compensation: **Agata Exner**, PhD, Professor, Department of Radiology; **Matthew Lester**, MBA, MHA, CPA, Senior Associate Dean for Finance; **Vivien Wei**, MBA, Manager, Strategic Initiatives

Activities

- Presentation by **Susan Freimark**, M.A., L.P.C., Director, Faculty Development and Diversity SOM on upcoming faculty development opportunities.
- Discussed Eldercare/childcare needs
- Discussed Plan A restoration
- Discussed continued need to brand CWRU as supportive of diversity - updating web pages, addressing hallways and conference rooms to reflect diversity of faculty and students.
- Discussed CWRU COVID Survey findings with a focus on women and URiM faculty.

Faculty Salary Equity

Summary of take-home points:

- Data was limited to 100% CWRU paid faculty
- Leadership (Dean, Vice-Deans, Chairs, Vice-chairs) not included
- Did not include incentive pay
- Newly hire faculty show equity between men and women
- Longer serving faculty have larger variability
- ~30% women faculty were hired in past 10 yrs
- Drivers of salary discrepancy – rank, years in service

Ongoing needs:

- Need analysis of incentive pay
- Need analysis of start-up packages for new recruits for equity
- Encourage clinical affiliates to conduct salary equity analysis
- Chairs should have salary equity analysis of departmental faculty and confidential discussion with Matthew Lester or other individual on a regular basis (every 2 -5y).
- More senior women faculty are encouraged to ask for a salary equity review.

COVID Survey

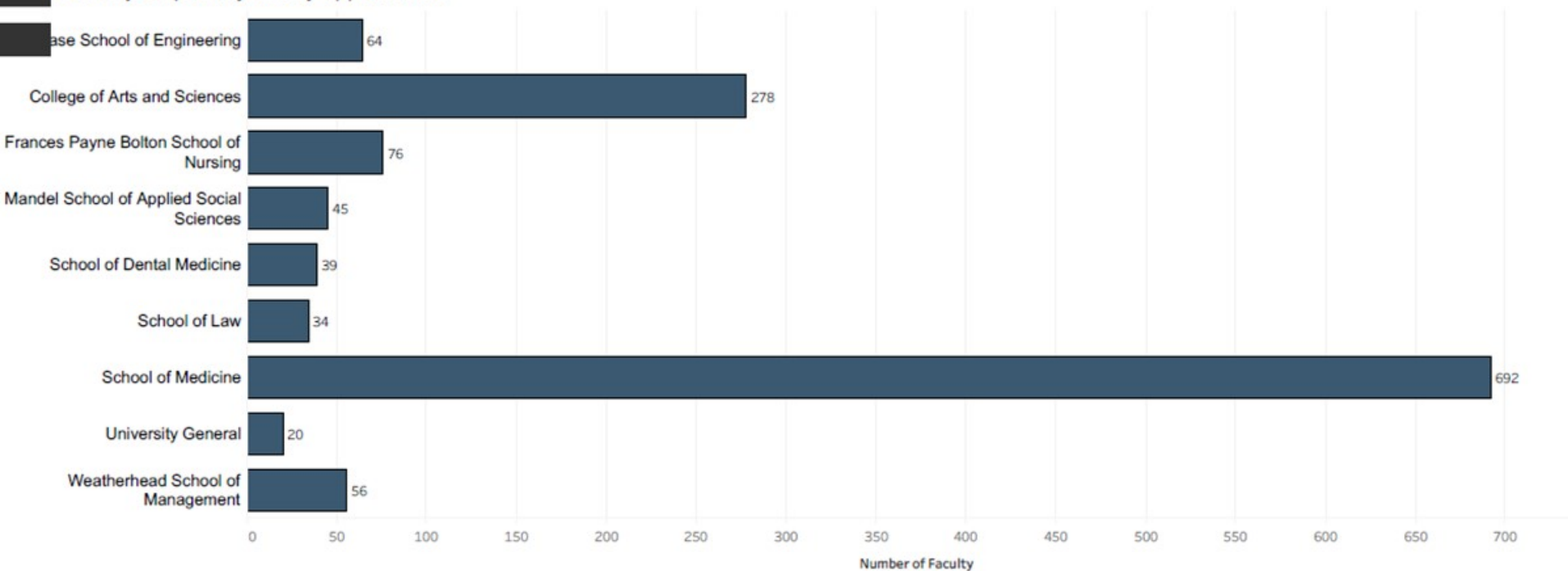
Summary of take-home points:

- Large impact of pandemic on faculty
- Women report more negative impact overall than men and “other”
- Women reported increased professional workload than men.
- Race/ethnicity: URM report more negative impact than Asian, White, and “other”
- More women said teaching responsibilities have increased compared to men
- Women reported more impact on clinical responsibilities than men
- Women reported increased household responsibilities, more eldercare responsibilities than men
- Women, Asian faculty and URM reported increased childcare responsibility
- Overall levels of stress higher for women, Asian and URM faculty.

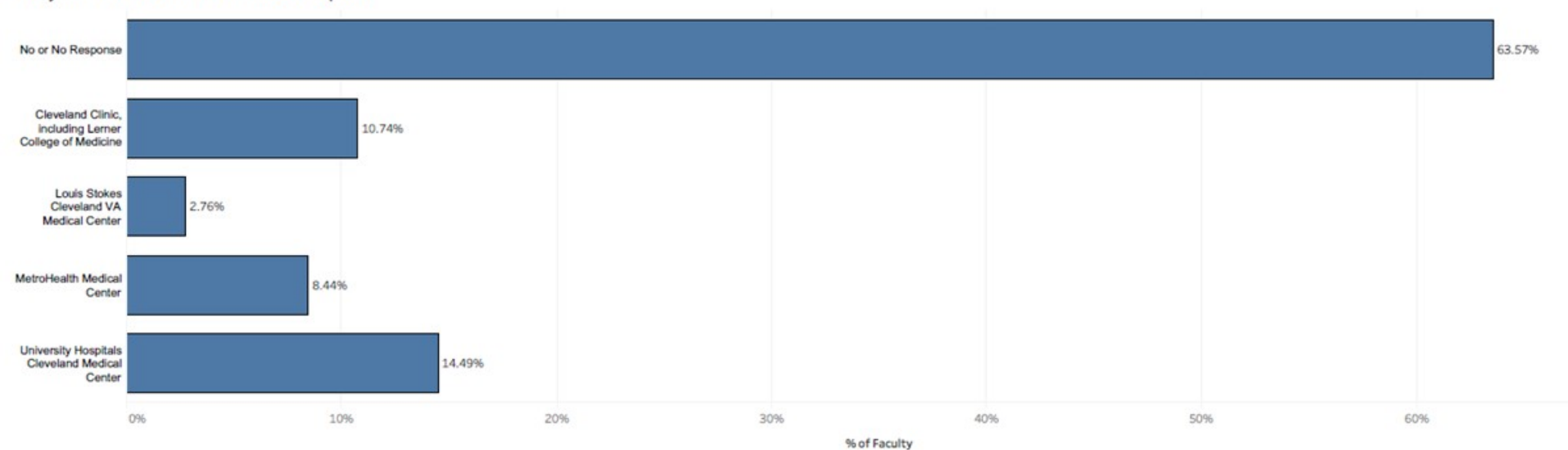
Ongoing needs:

- Similar percentages of men and women accepted the one-year tenure extension, consider impacts of delayed tenure, which has adverse financial implications
- Women strongly supported flexibility in work schedule, hybrid models
- Need for childcare options is clear; drop-in center, subsidies, childcare center.

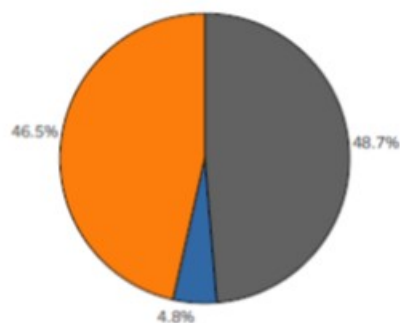
school or your primary faculty appointment:



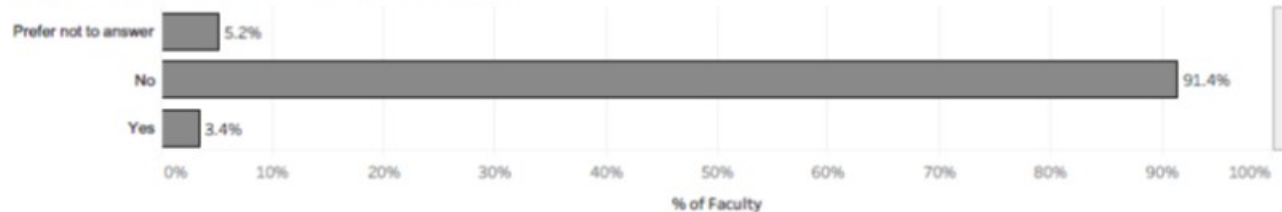
Do you also work at an affiliated hospital?



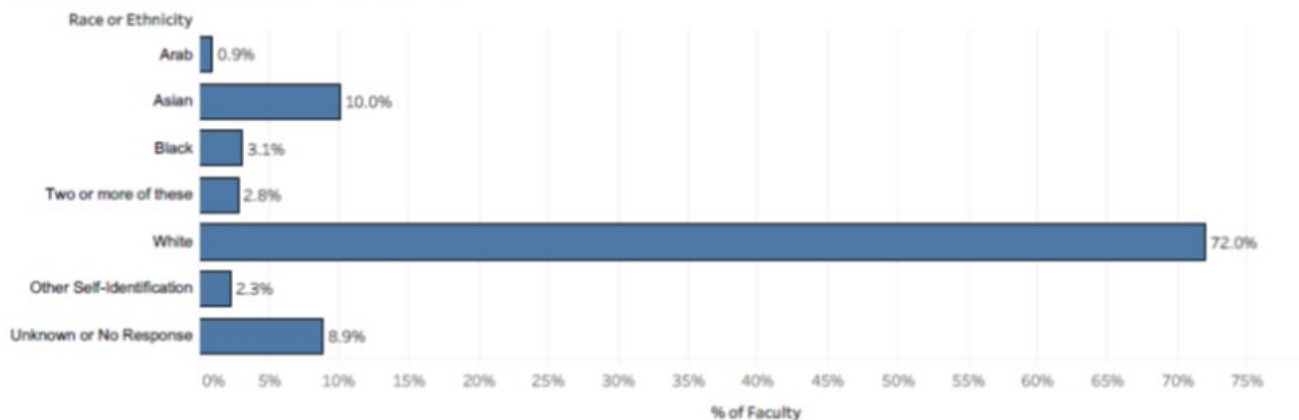
Which of the following best describes your gender identity?



Are you of Hispanic, Latinx, or Spanish origin?

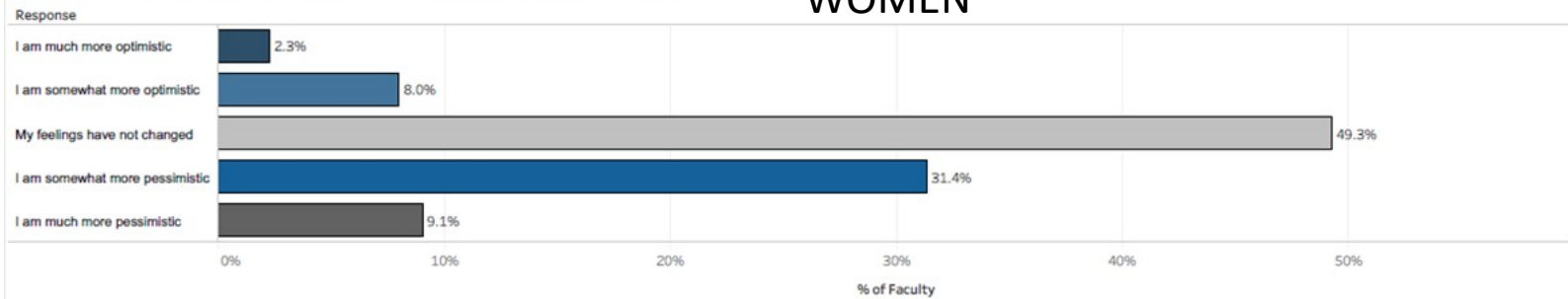


How would you describe your ethnicity?

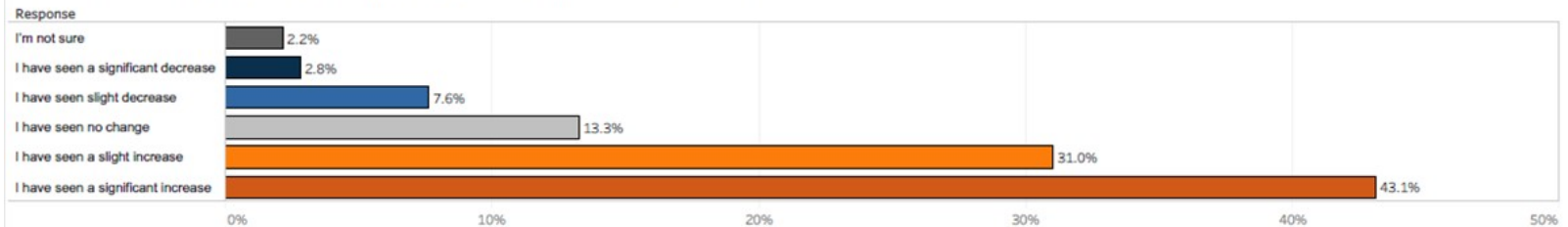


How has the pandemic affected your feelings or perspective on your career?

WOMEN

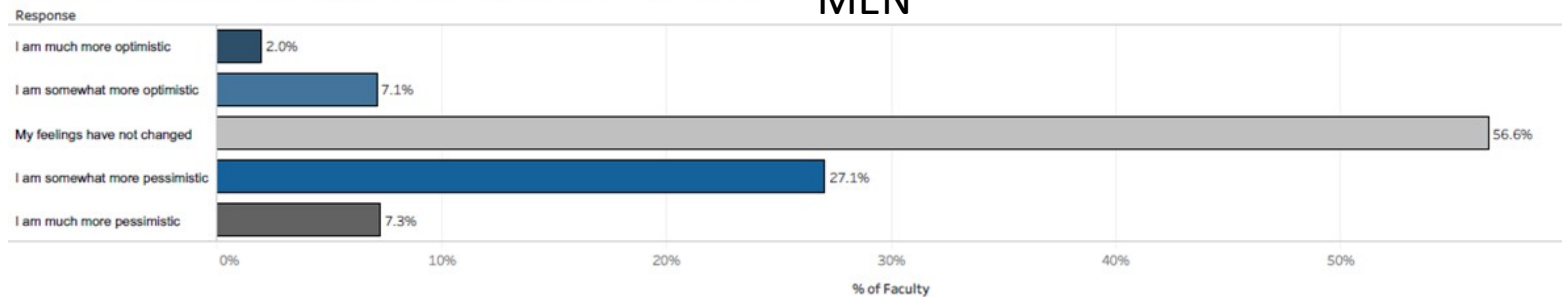


To what extent has the pandemic impacted your overall professional workload?

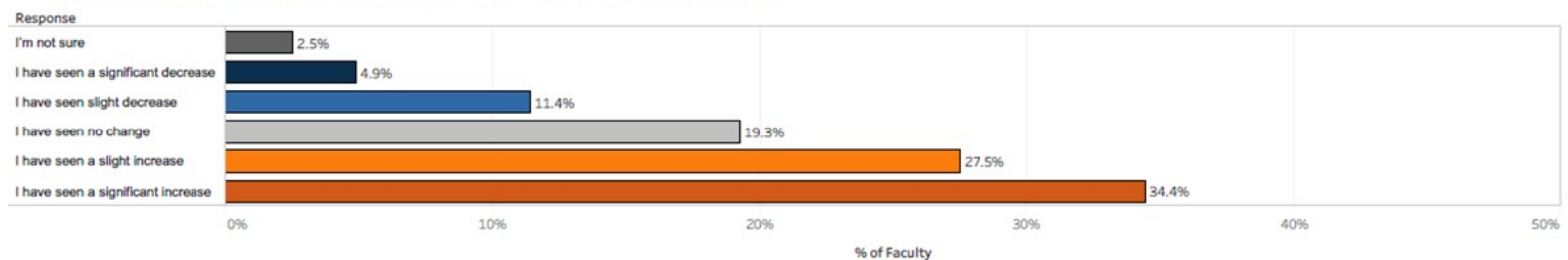


How has the pandemic affected your feelings or perspective on your career?

MEN



To what extent has the pandemic impacted your overall professional workload?



Chair Report

- Steering Committee provided:
 - approval of summer PA graduates & winter MD graduates
 - advice to the dean on interim chair and chair nominations
 - equity review for senior level promotion candidates
- Faculty Council supported:
 - approval of 24 amendments to the Bylaws
 - new minor in Nutrition “*Nutrition and Lifestyle Management*”
 - Faculty Graduate Teaching credit – Marvin Nieman
 - ambassadors for new faculty – Susan Freimark
 - SOM meeting with Dean Gerson: Plan A, Diversity plan implementation, space, recruitment of faculty and students
 - change Graduate Program Committee from Ad hoc to a standing committee
 - identification of members to serve on ad hoc Committee to Study Professional Code of Conduct (7 appointed & 7 elected)
 - revision to FASF – adding question on DEI activities



CWRU Action Form for Majors/Minors/Programs/Sequences/Degrees

Docket # _____

(instructions on back)

College/School: School of MedicineDepartment: Biochemistry

PROPOSED: ☐ major (both BA and BS degrees)
☐ minor
☐ program
☒ sequence
☐ degree

TITLE: Biochemistry Research Honors TrackEFFECTIVE: Spring (semester) 2022 (year)**DESCRIPTION:**

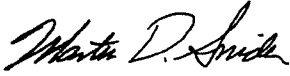
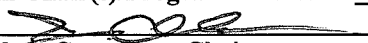
The Biochemistry undergraduate major has a long history of recruiting excellent students to our BA and BS programs and working closely as these students study and mature into able and accomplished alumni. To recognize the achievements of these students and challenge them to greater accomplishments, we are proposing Biochemistry Research Honors tracks in both the BA and BS Biochemistry majors. This program will admit 5 students per year and offer them funds to support summer research or travel to conferences. This track will require extra work from the students and will offer additional opportunities for mentoring. The program will enhance the educational experience for students in these tracks and will help us attract outstanding students to our majors.

Is this major/minor/program/sequence/degree: ☒ new
☐ modification
☐ replacement

If modification or replacement please elaborate: _____

Does this change in major/minor/program/sequence/degree involve other departments? ☐ Yes ☒ No

If yes, which departments? _____

Contact person/committee: Dr. Martin Snider, Department of Biochemistry**SIGNATURES:**Department Curriculum Chair(s)/Program Directors:  DATE April 13, 2021Department Chair: 

College/School Curriculum Committee Chair: _____

College/School Dean(s): _____

FSCUE Curriculum Subcommittee Chair: _____

File copy sent to: ☐ Registrar ☐ Office of Undergraduate Studies/Graduate Studies
☐ Other: _____

INSTRUCTIONS

(** indicates attachments required)

1. **Docket # will be filled in by the Dean's Office.**
- **** 2. **For a NEW major/minor/program/sequence/degree, include an outline of the requirements and provide a justification for establishment. For a CHANGE, describe specific changes in requirements and provide justification for all changes.**
3. **The completed form (with accompanying documents) should be signed by the originating department's curriculum committee chair and department chair, other departments as required, then forwarded to the dean's office. Do not send forms directly to the Registrar's Office. The Provost and various deans' offices will coordinate transmittals.**

Proposal for Biochemistry Research Honors Track in the Biochemistry BA and BS majors

Introduction

The Biochemistry undergraduate major has a long history of recruiting excellent students to our BA and BS programs and working closely as these students study and mature into able and accomplished alumni. Many of the most able students have remarkable achievements as biochemistry majors. In the last two years, 10% of our students have graduated with perfect 4.0 GPAs and nearly half had GPAs of 3.8 or higher. Many of our graduates go on to excel in MD, PhD, and MD/PhD programs.

In order to recognize the achievements of these students and challenge them to greater accomplishments, we are proposing Biochemistry Research Honors tracks in both the BA and BS Biochemistry majors. This competitive program will admit 5 students per year and offer them funds to support summer research or travel to conferences. This track will require extra work from the students and will offer additional opportunities for mentoring. This selective program will enhance the educational experience for students in these tracks. It will also help us attract outstanding students to our majors.

We expect superior students to follow this track. By participating, they will be immersed in Biochemistry earlier than they would otherwise. This should increase Honors Students' achievement and give these students recognition for their work. Several other schools in Ohio, including Ohio State and Miami University offer Honors programs that have elements similar to the one we are proposing.

This Research Honors track is distinct from two other types of honors that are awarded to Biochemistry majors. The university awards Latin honors¹ based only on GPA. Biochemistry majors can also earn Biochemistry Honors with their degrees. This is based on GPA, research, and being a co-author on a manuscript that is submitted for publication, in press or published.² These honors will continue to be awarded to Biochemistry majors with their degrees. In addition, the Biochemistry Department awards prizes at graduation to undergraduates with a GPA of 3.9 or higher (Wood prize and Utter prize for BS and BA students, respectively). In contrast, the Research Honors students will participate in this program throughout their time as Biochemistry majors and will have this accomplishment recorded on their transcripts as completion of the track. Because students will be enrolled in the track throughout their time as Biochemistry majors, they can include this on applications to graduate and professional schools, in contrast to the other honors, which are awarded at commencement.

Proposed curriculum

Students will be selected for the Research Honors tracks at the end of the first year when they declare their majors. An application will be required and admission will be a competitive process (described below under Admissions).

The track will be the same for BA and BS students. Most elements of the curriculum will be the same as for Biochemistry majors in the BA and BS programs (Appendix 4). The curriculum includes courses in math, chemistry, biology and physics, as well as core Biochemistry courses

¹ Cum Laude, Summa Cum Laude, and Magna Cum Laude

² bulletin.case.edu/collegeofartsandsciences/biochemistry/

Proposal for Biochemistry Research Honors Track in the Biochemistry BA and BS majors

(307, 308, 312, and 334) and electives. Research Honors students will be required to achieve at a higher level than other majors.

In addition, the Research Honors Track includes the following unique elements:

Biochemistry Honors Independent Study. Students in the Honors tracks will take Biochemistry Honors Independent Study (BIOC 285, 1 credit, Pass/No Pass) in the fall semester of their sophomore year. In this tutorial course, students will have weekly meetings with a faculty mentor. During these meetings, the student and the mentor will read and discuss papers from the biochemical literature. The goal is to introduce the student to in-depth biochemical research. If the student has not found a research lab, the student can also take this opportunity to find a research lab, with the guidance of the mentor. The syllabus for this course is included as Appendix 2.

Independent Research: Research Honors students will be required to select a research mentor by the end of the third semester and begin research during the fourth semester, although they may begin earlier. We encourage students to join labs in the Biochemistry Department, but they may join any laboratory in the University or its affiliated institutions, so long as the lab is headed by a CWRU faculty member. The research in the laboratory must have a strong biochemistry component (broadly defined) and must include some "wet bench" research. Students may not work in labs doing only clinical studies. In addition, the student's research must be part of a well-defined project. (All Biochemistry majors do research for their capstones but are only required to begin by the end of the third year).

Research Honors students must be involved in research every semester after they join a lab, with their research project serving as the senior capstone. Students may perform research as volunteers in the second year (many students will have started in their freshman year). In their junior and senior years, students will accumulate credit as BIOC 391 (Research Project) and BIOC 393H (Honors Capstone, see below) in their final semester. Students will be strongly encouraged to spend at least one summer doing full-time laboratory research. This will provide an opportunity for deep learning about their project, as well as getting enough research results to contribute to a publication. The Honors Research financial award can be used as part of a stipend for this summer research.

At the end of every semester, students must submit a 3- to 5-page research report and the research mentor must submit an evaluation. This information will be part of our evaluation of students' progress in the Research Honors track (see below).

In their final semester, Biochemistry Research Honors students will take BIOC 393H (Honors Capstone, 3 credits, graded). This course will require students to write a report describing their undergraduate research in the format of a research article, give a talk describing this research at the retreat for graduating seniors, and write a focused review article or a preview of a high-impact article. The syllabus for this course is included as Appendix 3.

Other activities. Research Honors students will participate in other non-academic activities. These will include 3-4 meetings per semester, including lunch with the Biochemistry Department

Proposal for Biochemistry Research Honors Track in the Biochemistry BA and BS majors

chair, meetings with visiting seminar speakers, social activities, etc. These activities will provide opportunities for learning and mentoring. Students will learn from faculty members and outside visitors. Moreover, interactions between junior and senior Research Honors students will provide valuable opportunities for growth by all students.

Research Honors Funds: Students will have an allowance of \$2000/year. These funds may be used to support research activities, including participation in scientific conferences, a stipend for doing summer research, or other expenses. (This fund may be used only for expenses that are approved in advance).

Satisfactory Progress: We expect Research Honors students to achieve at high levels in every phase of the program. This includes

- a) GPA of 3.9 or above. This goal will be attainable for Research Honors students. In the last several years, 34% of Biochemistry majors have had GPAs ≥ 3.9 and 10% have had perfect 4.0 GPAs.
- b) Strong participation in research in every semester after students join a lab, assessed by student reports and mentor feedback. Because of the uncertainty of research, progress will be assessed based on effort and the student's growth as a researcher, rather than results.
- c) Participation in other Research Honors activities

Research Honors students who are not making acceptable progress at the end of a semester will have one semester to improve their performance in order to continue in the track. They will be removed from the program if there is no improvement. If the number of Research Honors students in a class falls below 5, we may recruit additional students to bring the number of students in that class back to 5.

Faculty and department information

Program Leadership: The Honors Research track will be led by Dr. David Samols, the head of the undergraduate program. He has led the major for many years and has extensive experience in student advising and program leadership. He is assisted by the Undergraduate Education Committee, which is composed of faculty members with important roles in undergraduate education. Dr. Samols and this group will be responsible for selecting students, mentoring students, organizing program activities, and monitoring student progress.

The Biochemistry Department has a strong commitment to undergraduate education. Nearly all of our faculty participate in the major as instructors, research mentors, or academic advisors. In the last 3 years, the Biochemistry Department has strengthened this commitment by hiring two faculty members dedicated to teaching, Drs. Susan Wang and Ryan Arvidson. The addition of these faculty members has provided energy for initiatives like this one.

The Biochemistry major enrolls 50-60 Biochemistry majors per year, which makes us the 6th largest undergraduate major in the University. In 2019-20, the major underwent a self-study and external review. We're pleased to say that the review was very positive.

Evidence of need for the proposed curricular initiative

Proposal for Biochemistry Research Honors Track in the Biochemistry BA and BS majors

The Biochemistry program recruits many very able undergraduate majors who do well in our program and then go on to significant accomplishments after graduation. We believe that the Biochemistry Honors Track will allow us to engage with these students earlier in their education, which will enhance their learning, their maturation and their accomplishments. It will allow us to give additional recognition to the accomplishments of these very able students.

Admissions Information

Research Honors students will be chosen in the spring of the first year. Applications will consist of CWRU grades and a personal statement. This will be followed by an interview with faculty members. Commitment to carry out research in a research lab to enhance their undergraduate experience will be a key criterion for selection.

Diversity will be an important goal of the admissions process. We will admit a group of students that reflects the diversity of CWRU's undergraduate population. We will promote the Research Honors track to Biochemistry majors and other undergraduates to make sure we have applications from as many students as possible. We will also make diversity an important criterion in selecting the cohort of Research Honors students.

Under the proposal by the FSCUE Ad-Hoc Subcommittee on Advising, Mentoring, and Student Success for updating student advising, students will choose their majors by March 31 of their first year. As a consequence, students will seek to join the Biochemistry Research Honors track at the same time as they are choosing their majors.

Projected enrollment

The enrollment will be limited to 5 students per class, with a maximum of 15 students in the 2nd-4th years. This will represent ~10% of the students enrolled in the Biochemistry major. As noted above, if a student leaves this program, we will recruit a replacement.

Resources

Resources required: The addition of the Research Honors track will require a small amount of additional effort. Honors students will be Biochemistry majors, which means that nearly all the courses and the administrative infrastructure are in place. Moreover, many of these students would have been Biochemistry majors if the program did not exist.

Additional faculty time will be required for the leadership of this program and for Biochemistry Honors Independent Study course (BIOC 285). The size of our faculty and the number of research faculty members means that we will be able to find five faculty members per year to participate in this course as mentors.

Student research will require faculty effort in training and mentoring. However, these students would work in faculty labs if the program did not exist and the students' research productivity will provide a return on the investment of faculty time.

Expense and revenue

Expense: The principal expense of this program is the annual \$2,000 award to each student. The cost will be \$10,000/year for each class of students, so the cost will reach \$30,000/year when the

Proposal for Biochemistry Research Honors Track in the Biochemistry BA and BS majors

program is fully populated in the third year.

Revenue: Students will be drawn from the group of Biochemistry majors, so this program will produce significant revenue only if it allows us to recruit additional students to the major. The Biochemistry Department is committed to supporting this program from existing tuition revenues. We also hope to use this program as a focus of outside fundraising.

Required University and SOM Resources

This program will place no special demands on the resources of the University and SOM. Students will use existing library resources and online resources provided by UTech and the needs of students in the Honors Program will be no different than those of other Biochemistry majors.

Appendices

1. Dean's letter of support
2. Proposal for BIOC 285, Biochemistry Honors Independent Study
3. Proposal for BIOC 393H, Honors Capstone
4. Current curricula for the Biochemistry BA and BS degrees



Stanton L. Gerson, MD
Interim Dean
Interim Senior Vice President for Medical Affairs

Office of the Dean
10900 Euclid Avenue
Cleveland, Ohio 44106-4915

Visitors and Deliveries
Biomedical Research Bldg., Rm. 113

phone 216-368-2825
fax 216-368-2820

casemed.case.edu

April 22, 2021

J. Alan Diehl, Ph.D.
Leonard and Jean Skeggs Professor
Chair Department of Biochemistry
Deputy Director and COO, Case Comprehensive Cancer Center
Case Western Reserve University

Dear Alan:

I am writing to confirm my enthusiastic endorsement of the creation of an Honors Research Track in the Biochemistry undergraduate program. This program will foster the education of outstanding student researchers by admitting them to this program in the first year and providing research mentorship throughout their time as undergraduates. It will also encourage the development of these students by providing early exposure to the scientific literature, group activities for students in the track, focused independent research throughout their undergraduate years, and financial support for research-related activities. Overall, this program will increase the number and strength of students in the Biochemistry undergraduate major. The program will also help you educate students who are prepared for employment and for further study. It will also make these graduates more competitive for employment and for postgraduate study in science and the health professions. This will have a positive impact on the future by nurturing and educating the next generation of physicians and scientists.

I understand that you have worked with Matthew Lester, Senior Associate Dean for Finance in the Medical School, to assess the costs of this initiative. He has endorsed the expenditure of these costs and confirms that they can be met within your department's budget projections.

In summary, this program will be an important addition to the educational portfolio of the Biochemistry Department. I am happy to endorse this effort.

Sincerely,

A handwritten signature in black ink, appearing to be "SLG", written over a horizontal line.

Stanton L. Gerson, M.D.
Interim Dean, School of Medicine
Interim Senior Vice President for Medical Affairs

Proposal for BIOC 285, Biochemistry Honors Independent Study

Rationale: The Biochemistry Department is developing a Research Honors track within the Biochemistry BA and BS majors. This track will give outstanding, highly motivated students the opportunity to excel in the major and offer recognition for their accomplishments.

The proposed course is part of the proposed Biochemistry Research Honors track. A proposal for the track is under review (Appendix 1). To provide context for the proposed course, the elements of this track are listed below.

- Students will be admitted to the track in the spring of their first year when students declare a major. Students who are interested in the track will apply and five will be selected from approximately 60 students who enter the Biochemistry major each year.
- Biochemistry Honors Independent Study, BIOC 285 (*this course*). Students will take this 1-credit course in the fall semester of their sophomore year. It is described in detail below.
- Independent Research: Research Honors students will be required to carry out capstone research in the lab of a faculty mentor throughout their time as Biochemistry majors. All Honors students must begin their research by the end of the third semester but are encouraged to begin earlier and to work during at least one summer. (All Biochemistry majors are required to carry out research. The requirement for the Research Honors track is more stringent).
- Didactic coursework: Students will take the same didactic courses as other Biochemistry majors to earn the BA or BS degree. These include courses in math, chemistry, biology and physics, as well as core Biochemistry courses (307, 308, 312, and 343) and electives. Research Honors students will be required to achieve at a higher level than other majors.
- Capstone: Biochemistry Research Honors students will take BIOC 393H (Honors Capstone, 3 credits) in their final semester.
- Other activities. Research Honors students will participate in other non-academic activities. These will include 3-4 meetings per semester, including meetings with the Biochemistry Department chair and visiting seminar speakers, social activities, etc.
- Research Honors Funds: Students will have an allowance of \$2000/year that may be used to support research activities, including participation in scientific conferences, or as a stipend for supporting summer research.

Course Faculty: The course will be led by the director of the Biochemistry undergraduate program (currently Dr. David Samols). He will assign students to faculty mentors, based on the students' interests and the mentors' expertise. These mentors will be primary faculty members in Biochemistry with experience in undergraduate advising and knowledge of biomedical research in the School of Medicine. Each participating faculty member will mentor one student.

Proposal for BIOC 285, Biochemistry Honors Independent Study

Biochemistry Honors Independent Study Course Syllabus

This one-credit course (BIOC 285) will be taken by Biochemistry Research Honors students in the fall semester of the second year. Enrollment will be by permission only.

The course will introduce students to biochemistry and the Biochemistry program at a time when most majors are taking required courses in math, chemistry, biology, and physics. The innovative aspects of the course are an extended series of one-on-one meetings with an assigned faculty mentor. These meetings early in their undergraduate studies will introduce students to scientific research, help students build skills in reading the primary scientific literature, and help students find outstanding placements for their capstone research.

Faculty: The course will be led by the director of the Biochemistry undergraduate program (currently Dr. David Samols). He will assign students to faculty mentors, based on the students' interests and the mentors' expertise. These mentors will be primary faculty members in Biochemistry with experience in undergraduate advising and knowledge of biomedical research in the School of Medicine. Each participating faculty member will mentor one student.

Learning Objectives

Students in this course will be able to:

1. Read scientific papers and explain the experimental techniques, key findings, and impact on our understanding of biomedical science.
2. Choose a lab for their capstone research, evaluating their opportunities based on their understanding of their scientific interests and the research carried out in that laboratory.
3. Appreciate the importance of the responsible conduct of research in the execution and dissemination of scientific research.

Course activities:

Weekly mentor-scholar meetings.

Student will meet with their faculty mentor for one hour each week. These meetings will have two principal activities:

- Reading research articles. Scholars and mentors will discuss a series of research articles chosen by the mentor and the student. The goals are to introduce students to scientific research, especially in learning about scientific techniques and how research projects are planned to advance our scientific knowledge, as well as providing knowledge in areas that interest the student. This will help students acquire a skill set that will allow them to begin critically reading, understanding, and critiquing the primary scientific literature.
- Choosing a research mentor for capstone. If the student has not chosen a research lab, the mentor and student will work on choosing a mentor. This will involve reading papers, and "interviewing" prospective mentors. We expect that some students will have chosen research placements by the end of the first year. The others will work with their mentors so that all students have a lab placement by the end of the course.
- Students will keep a journal that includes:
 - A 2-3 page summary of each paper they read and discuss.
 - Their activities in choosing a research mentor
 - Reflections on the Responsible Conduct of Research sessions

Proposal for BIOC 285, Biochemistry Honors Independent Study

Other course activities

Students will meet together twice in the second half of the semester to discuss research ethics and the responsible conduct of research. Discussions will use case studies from the NIH (<https://ori.hhs.gov/rcr-casebook-stories-about-researchers-worth-discussing>) and Macrina's *Scientific Integrity: Text and Cases in Responsible Conduct of Research*. Cases that are appropriate for undergraduate students will be used.

The students will meet as a group for two sessions at the end of the semester. Each student will present a summary of one of the subjects that they studied during the semester. They will also discuss their lab choices and the research projects that they will work on.

Weekly schedule:

Week	
1	Orientation meeting with course director
2 - 7	Meetings with faculty mentor
8	Group discussion of Responsible Conduct of Research
9-11	Meetings with faculty mentor
12	Group discussion of Responsible Conduct of Research
13-14	Group meetings. Students present a summary of one of the subjects that they studied and discuss their lab choices and the research projects that they will work on.

Evaluation: BIOC 285 will be a Pass/No Pass course. Students will be evaluated on effort, progress in thinking, reading, and talking about science, as well as engagement in finding a research mentor. The evaluation will be based on the mentor's evaluation of student effort and engagement and the student's weekly journal. These two components will have equal weight in the evaluation. Because students and faculty mentors meet weekly, mentors will keep students apprised of their progress throughout the semester.

Disability Accommodations

In accordance with federal law, if you have a documented disability, you may be eligible to request accommodations from Disability Resources. To be considered for accommodations you must first register with the Disability Resources office. Please contact their office to register at 216.368.5230 or get [more information on how to begin the process](#). Please keep in mind that accommodations are not retroactive.

Academic Integrity

Any violation of the University's Code of Ethics will not be tolerated. All forms of academic dishonesty including cheating, plagiarism, misrepresentation, and obstruction are violations of academic integrity standards and will result in a minimum penalty of receiving a zero for the assignment, the potential for failing the entire course. Cheating includes copying from another's work, falsifying problem solutions or laboratory reports, or using unauthorized sources, notes, or computer programs. Plagiarism includes the presentation, without proper attribution, of another's words or ideas from printed or electronic sources. It is also plagiarism to submit, without the instructor's consent, an assignment in one class previously submitted in another. Misrepresentation includes forgery of official academic documents, the presentation of altered or falsified documents or testimony to a university office or official, taking an exam for another student, or lying about

Proposal for BIOC 285, Biochemistry Honors Independent Study

personal circumstances to postpone tests or assignments. Obstruction occurs when a student engages in unreasonable conduct that interferes with another's ability to conduct scholarly activity. Destroying a student's computer file, stealing a student's notebook, and stealing a book on reserve in the library are examples of obstruction.

In addition, the incident will be reported to the Dean of Undergraduate Studies and Academic Review Board for undergraduates or Senior Associate Dean of Graduate Studies, for Graduate Students. The CWRU Statement of Ethics for graduate students can be found here:

<http://case.edu/gradstudies/about-the-school/policies-procedures/>

Proposal for BIOC 393H—Honors Senior Capstone

Rationale: The Biochemistry Department is developing a Research Honors track within the Biochemistry BA and BS majors. This track will give outstanding, highly motivated students the opportunity to excel in the major and offer recognition for their accomplishments.

The proposed course will be part of the Biochemistry Research Honors track. A proposal for the track is under review (Appendix 1). To provide context for the proposed course, the elements of this track are listed below.

- Students will be admitted to the track in the spring of their first year when students declare a major. Students who are interested in the track will apply and five will be selected from approximately 60 students who enter the Biochemistry major each year.
- Biochemistry Honors Independent Study, BIOC 285. Students will take this new 1-credit course in the fall semester of their sophomore year. (Appendix 2).
- Independent Research: Research Honors students will be required to carry out capstone research in the lab of a faculty mentor throughout their time as Biochemistry majors. All Honors students must begin their research by the end of the third semester but are encouraged to begin earlier and to work during at least one summer. (All Biochemistry majors are required to carry out research. The requirement for the Research Honors track is more stringent).
- Didactic coursework: Students will take the same didactic courses as other Biochemistry majors to earn the BA or BS degree. These include courses in math, chemistry, biology and physics, as well as core Biochemistry courses (307, 308, 312, and 343) and electives. Research Honors students will be required to achieve at a higher level than other majors.
- Capstone: Research Honors students will take BIOC 393H (Honors Capstone, 3 credits) in their final semester (*this course, described in detail below*).
- Other activities. Research Honors students will participate in other non-academic activities. These will include 3-4 meetings per semester, including meetings with the Biochemistry Department chair and visiting seminar speakers, social activities, etc.
- Research Honors Funds: Students will have an allowance of \$2000/year that may be used to support research activities, including participation in scientific conferences, or as a stipend for supporting summer research.

Proposed course: The Honors Senior Capstone:

This course will fulfill the requirement for a senior capstone as part of the Biochemistry BS and BA majors. This course will only be open to students in the Honors Research Program and registration will be by permission only.

Each student will complete the following assignments:

1. A 15- to 20-page document describing their undergraduate research findings, written in the format of an article in a scientific journal.
2. A 15-minute oral presentation describing their research findings at the Biochemistry retreat for graduating seniors
3. A short review article covering the area of scientific research in which they have been working. This review can be either a short topical review summarizing a research area or it can be a "preview" that introduces and summarizes a few recent high-impact publications. This will be modeled on previews published in *Science*, *Nature*, and many other journals. Students will work closely with their research mentor to complete this article. This article

Proposal for BIOC 393H—Honors Senior Capstone

should be of high enough quality that it could be submitted to a scientific journal for publication.

Differences from BIOC 393, Senior Capstone Experience

BIOC 393H will be similar to BIOC 393, the current senior capstone course for Biochemistry majors. Students in both courses will complete the document summarizing their capstone research. However, more work will be required for 393H because of the following differences:

- Honors students in 393H will make an oral presentation whereas most Biochemistry students in BIOC 393 will present posters.
- Honors students in BIOC 393H will also write a review article (item 3 above), which is not required of students in BIOC 393.

Course director: The director of BIOC 393H will be the director of the Biochemistry undergraduate majors (currently Dr. David Samols).

Course Syllabus

The capstone is the culmination of your research activity in the Biochemistry program. BIOC 393H gives students in the Honors Research track the opportunity to report your findings and share them with other students and faculty. It also allows you to solidify your knowledge in your research area.

Learning Objectives

Students in this course will be able to:

1. Report their research accomplishments in the form of a scientific manuscript.
2. Present their research accomplishments to their peers in the form of a polished oral presentation
3. Demonstrate their proficiency in an area of biochemistry by writing a publication-quality review or preview article.

Course Activities

This course has three requirements:

1. A research report describing the findings of your undergraduate research, written in the format of an article in a scientific journal.
2. A 15-minute oral presentation describing your research findings at the Biochemistry retreat for graduating seniors
3. A review or preview article covering the area of scientific research in which you have been working

There will be an organizational meeting at the beginning of the semester and several meetings during the semester to help the instructor monitor student progress. In addition, students will peer edit drafts of papers from the other students in the class.

Research Report

The goal is to write a paper in the form of a scientific manuscript on the research you did in your mentor's laboratory. We are most interested in the results of your experiments, but you may have to incorporate data from others in the lab for the results to make sense. If that is the case, acknowledge

Proposal for BIOC 393H—Honors Senior Capstone

the contribution from other members of the lab in tables or figure legends to clearly identify each result that isn't yours.

- The paper must be written in the form of a scientific article consisting of title, abstract, introduction, materials and methods, results, discussion, figures and figure legends, acknowledgements, and references. You might also want to add a trouble shooting section if things didn't go as intended or a future directions section to describe what the next person in the lab will do to continue the project.
- Use double spacing to facilitate the review process. You may embed the figures and legends in the text or append them to the end of the document, your choice.
- Submit your paper in Google Docs, MS Word, or PDF format to facilitate the review by a faculty member.
- There is no length limit to the document, but they are typically 10-15 pages long, double spaced.
- Your capstone paper has to be written by you in your own words. Others in the lab can provide suggestions and comments but the final draft has to be yours. Your mentor should approve the document before it is submitted. A paper published by your mentor's group, even if you are a coauthor, does not qualify as a capstone paper.
- Use the guidelines and experience you received in BIOC 373 on how to write a scientific paper. It is often easiest to start by assembling the data (figures and tables) in a logical order even if that is not the chronological order in which the experiments were done. Then write the Results section as a description of the figures. Once the Results section is completed, add the Introduction, Discussion and Methods.
- Think carefully about your "take home" message. Make sure your major conclusions are clearly presented in the Summary, Results, and Discussion sections.
- Your mentor should be the senior author on your document which may also include others in the lab as co-authors if they made significant contributions (as detailed in the acknowledgements)
- Remember that clear writing requires work. Your paper should go through many drafts. It's a good idea to get comments from others to help polish your writing.

Oral Presentation

You will give a 10-15 minute talk at the Biochemistry retreat. You should prepare a slide presentation for your talk. Remember that it is difficult to present a lot of data in a short talk, so be sure select what you should carefully so you can make a clear presentation in the allotted time without rushing. Practice your talk and get comments from the members of your lab, so you can give an outstanding presentation.

Review Article

This review can be either a short topical review article summarizing a research area, or it can be a "preview" that introduces and summarizes a few recent high-impact publications. This article should be of high enough quality that it could be submitted to a scientific journal for publication.

You should work with your research mentor to prepare the article. It must be completed by the end of BIOC 393H. However, you may prepare this article at any time during your Biochemistry major, particularly if you and your research mentor plan to submit the article for publication.

Proposal for BIOC 393H—Honors Senior Capstone

We will meet with students throughout the semester to guide you through this process. In addition, we understand that this is an undergraduate course. Your work will be evaluated based on our expectations for undergraduates.

Topical review article:

The goal of review articles is to summarize the current state of knowledge in the field of your research. We ask that you write an article (15-20 pages double-spaced) that focuses on one aspect of your research area. The goal is to:

- Select a focused area of research that you can review in an article of this length.
- Write an article that summarizes the state of knowledge, identifies the areas that need further work, and emphasizes the most important recent findings.
- Write a clear concise article that can be understood by someone working outside this immediate area of research.

Previews of a research article will be modeled on previews published in *Science*, *Nature*, and other journals. These articles (5-10 pages, doubled spaced) introduce high-impact publications to a wide audience by providing a short, easy to understand explanation of the experiments in the article and its wider importance. The key elements of this article are:

- An explanation of the scientific question under investigation
- An explanation of what experiments were done and the key findings
- An explanation of the importance of the findings, as well as a consideration of their impact on future research, our understanding of biomedical science, and on the understanding and treatment of human disease.

Grading: The overall grade will be the mean of individual grades from the following weighted equally:

- Your mentor's evaluation of your work in the lab
- The research paper
- The oral presentation
- The review article

Disability Accommodations

In accordance with federal law, if you have a documented disability, you may be eligible to request accommodations from Disability Resources. To be considered for accommodations you must register with the Disability Resources office. Contact their office to register at 216-368-5230 or get more information on how to begin the process. Accommodations are not retroactive.

Academic Integrity

Any violation of the University's Code of Ethics will not be tolerated. All forms of academic dishonesty including cheating, plagiarism, misrepresentation, and obstruction are violations of academic integrity standards and will result in a minimum penalty of receiving a zero for the

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assignment, the potential for failing the entire course. Cheating includes copying from another's work, falsifying problem solutions or laboratory reports, or using unauthorized sources, notes or computer programs. Plagiarism includes the presentation, without proper attribution, of another's words or ideas from printed or electronic sources. It is also plagiarism to submit, without the instructor's consent, an assignment in one class previously submitted in another. Misrepresentation includes forgery of official academic documents, the presentation of altered or falsified documents or testimony to a university office or official, taking an exam for another student, or lying about personal circumstances to postpone tests or assignments. Obstruction occurs when a student engages in unreasonable conduct that interferes with another's ability to conduct scholarly activity. Destroying a student's computer file, stealing a student's notebook, and stealing a book on reserve in the library are examples of obstruction. In addition, the incident will be reported to the Office of Undergraduate Studies as an academic integrity violation (case.edu/ugstudies/academic-policies/academic-integrity)

Bachelor of Arts in Biochemistry

Required Courses:		
<u>BIOC 307</u>	Introduction to Biochemistry: From Molecules To Medical Science	4
<u>BIOC 308</u>	Molecular Biology	4
<u>BIOC 373</u>	Biochemistry SAGES Seminar (SAGES Departmental Seminar)	3
Biochemistry elective:		3
<u>BIOC 312</u>	Proteins and Enzymes	
or <u>BIOC 334</u>	Structural Biology	
Two approved technical electives in biochemistry		6
<u>BIOC 393</u>	Senior Capstone Experience	3
Additional Required Courses:		
<u>BIOL 214</u> & <u>214L</u>	Genes, Evolution and Ecology and Genes, Evolution and Ecology Lab	4
<u>BIOL 215</u> & <u>215L</u>	Cells and Proteins and Cells and Proteins Laboratory	4
<u>CHEM 105</u>	Principles of Chemistry I	3-4
or <u>CHEM 111</u>	Principles of Chemistry for Engineers	
<u>CHEM 106</u>	Principles of Chemistry II	3-4
or <u>ENGR 145</u>	Chemistry of Materials	
<u>CHEM 113</u>	Principles of Chemistry Laboratory	
<u>CHEM 223</u>	Introductory Organic Chemistry I	3
or <u>CHEM 323</u>	Organic Chemistry I	
<u>CHEM 224</u>	Introductory Organic Chemistry II	3
or <u>CHEM 324</u>	Organic Chemistry II	
<u>CHEM 233</u>	Introductory Organic Chemistry Laboratory I	2
<u>CHEM 234</u>	Introductory Organic Chemistry Laboratory II	2
<u>CHEM 301</u>	Introductory Physical Chemistry I	3
<u>MATH 125</u>	Math and Calculus Applications for Life, Managerial, and Social Sci I	4
or <u>MATH 121</u>	Calculus for Science and Engineering I	
<u>MATH 126</u>	Math and Calculus Applications for Life, Managerial, and Social Sci II	4
or <u>MATH 122</u>	Calculus for Science and Engineering II	
or <u>MATH 124</u>	Calculus II	
<u>PHYS 115</u>	Introductory Physics I	4
or <u>PHYS 121</u>	General Physics I - Mechanics	
or <u>PHYS 123</u>	Physics and Frontiers I - Mechanics	
<u>PHYS 116</u>	Introductory Physics II	4
or <u>PHYS 122</u>	General Physics II - Electricity and Magnetism	
or <u>PHYS 124</u>	Physics and Frontiers II - Electricity and Magnetism	
Total Units		66-68

BA Biochemistry, Sample Plan of Study			
Freshman		Units	
		Fall	Spring
Math and Calculus Applications for Life, Managerial, and Social Sci I (MATH 125) or Calculus for Science and Engineering I (MATH 121)		4	
Principles of Chemistry I (CHEM 105) or Principles of Chemistry for Engineers (CHEM 111)		3	
Independent Activity (PHED 100)		0	
SAGES First Seminar		4	
Genes, Evolution and Ecology (BIOL 214) & Genes, Evolution and Ecology Lab (BIOL 214L)		4	
Math and Calculus Applications for Life, Managerial, and Social Sci II (MATH 126) or Calculus for Science and Engineering I (MATH 121) or Calculus II (MATH 124)			4
Principles of Chemistry II (CHEM 106) or Chemistry of Materials (ENGR 145)			3
Principles of Chemistry Laboratory (CHEM 113)			2
SAGES University Seminar I			3
Cells and Proteins (BIOL 215) & Cells and Proteins Laboratory (BIOL 215L)			4
Independent Activity (PHED 100)			0
Year Total:		15	16
Sophomore		Units	
		Fall	Spring
Introductory Organic Chemistry I (CHEM 223) ^a or Organic Chemistry I (CHEM 323)		3	
Introductory Organic Chemistry Laboratory I (CHEM 233)		2	
Introductory Physics I (PHYS 115) ^b or General Physics I - Mechanics (PHYS 121) or Physics and Frontiers I - Mechanics (PHYS 123)		4	
GER Course		3	
SAGES University Seminar II		3	
Introductory Organic Chemistry II (CHEM 224) ^a or Organic Chemistry II (CHEM 324)			3
Introductory Organic Chemistry Laboratory II (CHEM 234)			2
Introductory Physics II (PHYS 116) ^b or General Physics II - Electricity and Magnetism (PHYS 122) or Physics and Frontiers II - Electricity and Magnetism (PHYS 124)			4
GER Course			3
Elective			3
Year Total:		15	15

BA Biochemistry, Sample Plan of Study			
Junior		Units	
		Fall	Spring
Introductory Physical Chemistry I (CHEM 301) or Physical Chemistry I (CHEM 335)		3	
Introduction to Biochemistry: From Molecules To Medical Science (BIOC 307)		4	
GER Course		3	
Electives		6	
Molecular Biology (BIOC 308)			4
Approved Technical Elective			3
Research Project (BIOC 391)			3
Electives or GER Courses			6
Year Total:		16	16
Senior		Units	
		Fall	Spring
Biochemistry SAGES Seminar (BIOC 373)		3	
Research Project (BIOC 391)		3	
Electives		6	
Proteins and Enzymes (BIOC 312) (or Approved Technical Electives) ^c		3	
Senior Capstone Experience (BIOC 393)			3
Structural Biology (BIOC 334) (or Approved Biochem or Technical Elective) ^c			3
Electives			6-9
Year Total:		15	12-15

Total Units in Sequence:**120-123**

Note: At least the 3 credits of undergraduate research, [BIOC 391](#) Research Project, is minimally recommended for the Capstone. An additional 3 credits of [BIOC 391](#) is highly recommended. Students should consult their academic advisers about the elective parts of the curriculum.

- a Selected students may be invited to take [CHEM 323](#) Organic Chemistry I or [CHEM 324](#) Organic Chemistry II
- b Selected students may be invited to take [PHYS 123](#) Physics and Frontiers I - Mechanics and [PHYS 124](#) Physics and Frontiers II - Electricity and Magnetism in place of [PHYS 121](#) General Physics I - Mechanics and [PHYS 122](#) General Physics II - Electricity and Magnetism
- c BA students must take either [BIOC 312](#) Proteins and Enzymes or [BIOC 334](#) Structural Biology. For BA students who take both courses, one course will serve as a technical elective.

Bachelor of Science in Biochemistry

Required Courses:		
<u>BIOC 307</u>	Introduction to Biochemistry: From Molecules To Medical Science	4
<u>BIOC 308</u>	Molecular Biology	4
<u>BIOC 312</u>	Proteins and Enzymes	3
<u>BIOC 334</u>	Structural Biology	3
<u>BIOC 373</u>	Biochemistry SAGES Seminar	3
Approved Technical Elective in Biochemistry		3
<u>BIOC 393</u>	Senior Capstone Experience	3
<u>BIOL 214</u> & <u>214L</u>	Genes, Evolution and Ecology & Genes, Evolution and Ecology Lab	4
<u>BIOL 215</u> & <u>215L</u>	Cells and Protein & Cells and Proteins Laboratory	4
<u>CHEM 105</u>	Principles of Chemistry I	3-4
or <u>CHEM 111</u>	Principles of Chemistry for Engineers	
<u>CHEM 106</u>	Principles of Chemistry II	3-4
or <u>ENGR 145</u>	Chemistry of Materials	
<u>CHEM 113</u>	Principles of Chemistry Laboratory	2
<u>CHEM 223</u>	Introductory Organic Chemistry I	3
or <u>CHEM 323</u>	Organic Chemistry I	
<u>CHEM 224</u>	Introductory Organic Chemistry II	3
or <u>CHEM 324</u>	Organic Chemistry II	
<u>CHEM 301</u>	Introductory Physical Chemistry I	3
or <u>CHEM 335</u>	Physical Chemistry I	
<u>CHEM 302</u>	Introductory Physical Chemistry II	3
or <u>CHEM 336</u>	Physical Chemistry II	
<u>CHEM 233</u>	Introductory Organic Chemistry Laboratory I	2
<u>CHEM 234</u>	Introductory Organic Chemistry Laboratory II	2
<u>MATH 121</u>	Calculus for Science and Engineering I	4
<u>MATH 122</u>	Calculus for Science and Engineering II	4
or <u>MATH 124</u>	Calculus II	
<u>MATH 223</u>	Calculus for Science and Engineering III	3
or <u>MATH 227</u>	Calculus III	
<u>MATH 224</u>	Elementary Differential Equations	3
or <u>MATH 228</u>	Differential Equations	
<u>PHYS 121</u>	General Physics I - Mechanics	4
or <u>PHYS 123</u>	Physics and Frontiers I - Mechanics	
<u>PHYS 122</u>	General Physics II - Electricity and Magnetism	4
or <u>PHYS 124</u>	Physics and Frontiers II - Electricity and Magnetism	
<u>PHYS 221</u>	Introduction to Modern Physics	3
<u>STAT 312R</u>	Basic Statistics for Engineering and Science Using R Programming	3
or <u>STAT 313</u>	Statistics for Experimenters	
Total Units		83-85

BS Biochemistry, Sample Plan of Study			
Freshman		Units	
	Fall	Spring	
Calculus for Science and Engineering I (MATH 121)	4		
Principles of Chemistry I (CHEM 105) or Principles of Chemistry for Engineers (CHEM 111)	3		
Independent Activity (PHED 100)	0		
SAGES First Semester	4		
Genes, Evolution and Ecology (BIOL 214) & Genes, Evolution and Ecology Lab (BIOL 214L)	4		
Calculus for Science and Engineering II (MATH 122) or Calculus II (MATH 124)		4	
Principles of Chemistry II (CHEM 106) or Chemistry of Materials (ENGR 145)		3	
Principles of Chemistry Laboratory (CHEM 113)		2	
SAGES University Seminar I		3	
Cells and Proteins (BIOL 215) & Cells and Proteins Laboratory (BIOL 215L)		4	
Independent Activity (PHED 100)		0	
Year Total:	15	16	

Sophomore		Units	
	Fall	Spring	
Introductory Organic Chemistry I (CHEM 223) ^a or Organic Chemistry I (CHEM 323)	3		
Introductory Organic Chemistry Laboratory I (CHEM 233)	2		
Calculus for Science and Engineering III (MATH 223) or Calculus III (MATH 227)	3		
General Physics I - Mechanics (PHYS 121) ^b or Physics and Frontiers I - Mechanics (PHYS 123)	4		
SAGES University Seminar II	3		
Introductory Organic Chemistry II (CHEM 224) ^a or Organic Chemistry II (CHEM 324)		3	
Introductory Organic Chemistry Laboratory II (CHEM 234)		2	
Elementary Differential Equations (MATH 224) or Differential Equations (MATH 228)		3	
General Physics II - Electricity and Magnetism (PHYS 122) ^b or Physics and Frontiers II - Electricity and Magnetism (PHYS 124)		4	
GER Course		3	
Year Total:	15	15	

Junior	Units	
	Fall	Spring
Introductory Physical Chemistry I (CHEM 301) or Physical Chemistry I (CHEM 335)	3	
Introduction to Biochemistry: From Molecules To Medical Science (BIOC 307)	4	
GER Course	3	
GER Course or elective	3	
Basic Statistics for Engineering and Science Using R Programming (STAT 312R) or Statistics for Experimenters (STAT 313)	3	
Introductory Physical Chemistry II (CHEM 302) or Physical Chemistry II (CHEM 336)		3
Molecular Biology (BIOC 308)		4
Introduction to Modern Physics (PHYS 221)		3
Research Project (BIOC 391)		3
GER Course or Elective		3
Year Total:	16	16

Senior	Units	
	Fall	Spring
Proteins and Enzymes (BIOC 312)	3	
Biochemistry SAGES Seminar (BIOC 373)	3	
Research Project (BIOC 391)	3	
Electives	6	
Structural Biology (BIOC 334)		3
Senior Capstone Experience (BIOC 393)		3
Electives		9
Year Total:	15	15

Total Units in Sequence:**123**

Note: At least the 3 credits of undergraduate research, [BIOC 391](#) Research Project, is a prerequisite to the Capstone. An additional 3 credits of [BIOC 391](#) is highly recommended. Students should consult their academic advisers about the elective parts of the curriculum.

- Selected students may be invited to take [CHEM 323](#) Organic Chemistry I or [CHEM 324](#) Organic Chemistry II
- Selected students may be invited to take [PHYS 123](#) Physics and Frontiers I - Mechanics and [PHYS 124](#) Physics and Frontiers II - Electricity and Magnetism in place of [PHYS 121](#) General Physics I - Mechanics and [PHYS 122](#) General Physics II - Electricity and Magnetism.