B. The scope of the Chemistry Addition and First Floor Renovation project shall provide approximately 29,700 new assignable square feet (asf) and 7,200 renovated asf to provide modern laboratories and collaboration spaces in support of the increasing demand for teaching and research.

C. The President shall be authorized to approve external financing (Century Bonds 2012 and 2015) in an amount not to exceed $46,921,000 plus additional related financing costs to finance the Chemistry Addition and First Floor Renovation project. The President shall require that:

(1) Interest only, based on the amount drawn, shall be paid on the outstanding balance during the construction period.

(2) As long as the debt is outstanding, the general revenues of the Davis campus shall be maintained in amounts sufficient to pay the debt service and to meet the related requirements of the authorized financing.

(3) The general credit of the Regents shall not be pledged.

D. Following review and consideration of the environmental consequences of the Chemistry Addition and First Floor Renovation project, as required by the California Environmental Quality Act (CEQA), including any written information addressing this item received by the Office of the Secretary and Chief of Staff to the Regents no less than 24 hours in advance of the beginning of this Regents meeting, testimony or written materials presented to the Regents during the scheduled public comment period, and the item presentation, the Regents:

(1) Adopt the CEQA Findings for the Project, having considered both the 2018 Long Range Development Plan (LRDP) Environmental Impact Report (EIR) for the Davis campus and February 2019 Addendum[3]; and

(2) Make a condition of approval the implementation of applicable mitigation measures within the responsibility and jurisdiction of UC Davis as identified in the Mitigation Monitoring and Reporting Program adopted in connection with the 2018 LRDP EIR.

(3) Approve the design of the Chemistry Addition and First Floor Renovation project, Davis campus.

E. The President shall be authorized to approve individual capital projects located in the Chemistry Building and Chemistry Annex with a cumulative total up to and including $25 million over a period of three years, until July 2022. Minor capital

[3] The February 2019 Addendum covers the proposed Chemistry Complex Addition and First Floor Renovation Project, other capital projects in the Chemistry Complex, as well as construction of a new Engineering Student Design Center at Bainer Hall, located southeast of the Chemistry Complex.

projects, within these buildings, with a project cost of less than or equal to $1 million are not included in the cumulative total.

[Background material was provided to Regents in advance of the meeting, and a copy is on file in the Office of the Secretary and Chief of Staff.]

Executive Vice President and Chief Financial Officer Brostrom briefly introduced the item. Chancellor May explained that, in 2006, UC Davis conducted an evaluation of the Chemistry Building and the Chemistry Annex and the buildings' systems and developed plans for a series of improvement projects. The first project aimed to address seismic and life safety deficiencies. This work was well under way and expected to be substantially complete in summer 2020. An expanded planning effort was completed in 2014 to identify strategies to increase and improve the quality of research and instructional space. The Chemistry Addition and First Floor Renovation was the first major project of the 2014 planning effort.

Vice Chancellor Kelly Ratliff recalled that the Chemistry Building was built in 1966 and the Annex completed in 1971. The campus was proposing an addition and a series of renovations. UC Davis had run out of options for providing any additional capacity in these buildings. The space and systems were inadequate. The Chemistry Building is a large building in the center of the campus. There was no effective way to move people and functions from this building to temporary locations elsewhere. Projects in this building were being implemented in a phased approach so that UC Davis can continue using this facility while upgrading and adding capacity.

With the proposed project, the cumulative investment in the Chemistry Building and Chemistry Annex would exceed $70 million. Pursuant to Regents Policy 8103: Policy on Capital Project Matters, Regents' review and approval is required to complete the planned renovation and expansion. The campus was seeking additional authority of up to $25 million over three years to facilitate other projects that were planned or under way and that might be needed as the campus hires additional faculty. Ms. Ratliff presented a slide with the project floor plan, showing how the project would fill in an existing courtyard space in the basement and provide additional space on the first and upper floors. Existing office spaces would be moved and laboratories would be renovated.

Referring to Leadership in Energy and Environmental design (LEED) targets, Regent Estolano noted that the campus was proposing both LEED Silver and Gold. She asked if LEED Silver was the target for the renovation and LEED Gold for the new construction. University Architect Jim Carroll responded that the campus intended to achieve LEED Silver. UC Davis hoped to reach LEED Gold but LEED Silver was a minimum standard for UC Davis on this project. LEED Gold would be more difficult to achieve in the renovation than in the new construction.

Ms. Ratliff stated that the campus would use the Design-Build approach, hoping to achieve LEED Gold if this was possible. UC Davis would use external financing from Century Bond proceeds. The project met UC's required thresholds for modified cash flow and debt

direct access to trades and suppliers without having to go through the general contractor or executive architect, and this results in transparent negotiations, pricing, and communication. IFOA creates incentives based on risk to profits, all the pooled profits of the participants, rather than based on bonus. IFOA eliminates hidden pools of contingency and labor escalation that are typically located in each of the parties' budgets. There are contractual limitations on disputes and change orders; this was different from the conventional approach. The team commitment to achieve the budget and the inclusion of the trades in setting the target cost reflected the culture and behaviors UCSF wished to cultivate for this project. The IFOA incorporated lessons learned from other projects.

Mr. Newman presented a diagram illustrating the IFOA structure. He recalled that, in the conventional contracting approach, there are separate contracts between the owner and the general contractor on one hand and between the owner and the executive architect on the other. These contracts cascade downward into multiple contracts with sub-consultants to the architect and subcontractors to the contractor. In an IFOA there is one master contract which includes all the key parties in a shared risk and reward group. This group includes the owner, the architect, the general contractor, all the major sub-consultants and subcontractors, and the key suppliers. All are signing one document and committing to the success of the project. The IFOA for this project would ultimately be signed by 15 to 18 parties. The parties outside this risk and reward group would be recruited through the normal public procurement code.

Mr. Newman then presented a number of project scenarios. He distinguished the project budget, the design and construction budget, and the target cost. The project budget includes owner contingency, the pooled profit of the IFOA signatories, and the direct cost of the project. The design and construction budget excludes the owner contingency. The target cost is set collectively by all the parties to the IFOA, and this excludes their pooled profit. Under scenario 1, the delivery of the project achieves the target, the team earns its full profit, and the owner retains its contingency. By anyone's definition this would be a successful project. Under scenario 2, the project is delivered over the target cost, so that the pooled profit at risk is partially expended. However, the owner retains 100 percent of its contingency and the project is delivered under the design and construction budget. Under scenario 3, the project is delivered under the target cost, the team earns its full profit and any savings are shared with the owner. An arrangement for sharing would be worked out in the negotiations. Under scenario 4, the project exceeds the target cost and all the pooled profit is used to cover the overage; however, the project is still within the design and construction budget. Under scenarios 1 to 4, the project is delivered on budget. From UCSF's perspective the project would be successful, although not from the team's perspective. Under scenario 5, the worst-case scenario, the project exceeds the design and construction budget. All the profits and the owner contingency are used to complete the project.

Regent Blum asked if UCSF was inclined to hire a general contractor, someone with whom the campus might now be in discussions. Chancellor Hawgood responded that UCSF first needed to receive approval to use this delivery model. UCSF would then issue Requests

for Qualifications for designers and builders, immediately after approval at the September meeting. UCSF had not spoken with a general contractor.

Mr. Newman explained that the IFOA uses a qualifications-based selection process, followed by competitive negotiations. UCSF would issue its Requests for Qualifications for designers and builders, evaluate responses to narrow the pool down to a certain number of finalists, evaluate the passing candidates on multiple criteria, including an interview with an oral presentation, select the preferred candidate, and enter into negotiations. If unable to reach terms with that candidate, UCSF would move to the second-ranked candidate, and then execute the IFOA. Mr. Newman noted UCSF's commitment to being a leader with regard to labor practices. UCSF requires prevailing wages, respects jurisdictional work boundaries among the various trades, uses union labor, continues to partner with the City and County of San Francisco on programs that target local hiring, and maintains its own construction community outreach program. UCSF intended to insert in the Request for Qualifications, among the criteria for selection, California Public Contract Code sections 10506.8 and 10506.9, which allow UC to require a skilled and trained workforce to complete the program. Compliance with California Public Contract Code sections 10506.8 and 10506.9 would also be required in the terms of the IFOA for key participants.

Committee Chair Makarechian asked how this approach would differ from previous projects and who the actual owner in this case was, the one who would bear responsibility for bond financing. Vice President J. Stuart Eckblad responded that, for the Mission Bay Hospital project, UCSF had separate contracts with the architect and with the general contractor, who both, in turn, had their own separate contracts with engineers and subcontractors for mechanical, electrical, and plumbing. UCSF now wished to leverage the success of the Mission Bay Hospital project to greater heights. If UCSF could have better and direct access to each subcontractor, this would improve constructability because UCSF would see where and how contingency monies are being spent. The model used for the Mission Bay Hospital project was the Construction Manager at Risk model, a traditional model with separation of the parties. The most significant disputes or differences of opinion in this model occur when the design of the architect and the design of the subcontractor are not coordinated, and this leads to costly change orders. In the IFOA model, with the shared risk and reward group, these parties could not request a change order due to that lack of coordination. This model would minimize the number of claims for change orders and limit the opportunities to work in separation. Experience has shown that integrating all participants and contracts into one business entity on the project site, with profit at risk, leads to collaboration and innovation. The new California Pacific Medical Center in San Francisco was built using this contract method. That project was successfully completed with substantial savings and on time. The building is over one million square feet in size and is located on a very constricted site. The IFOA allowed for pre-fabrication and work offsite. The IFOA model would allow UCSF to work more directly with those providing the services, and these entities are incentivized to work together rather than separately for improved performance and accountability.

Committee Chair Makarechian asked about payment and performance bonds. Mr. Eckblad responded that payment and performance bonds would be provided by the contractor or

subcontractors. Committee Chair Makarechian asked about how risk would be shared. Mr. Eckblad responded that each participant would be issuing a bond. Once UCSF had selected the team, there would be a validation phase that would take several months. During this time, the price of the work would be set. Once the price was set, bonds would be issued.

Committee Chair Makarechian asked what would happen if the architect issued a change order and how UCSF would minimize the risk of conflict in such a situation. He stated that the IFOA model looked good but expressed skepticism about its ability to function practically and deliver the results that UCSF expected unless there were no payment or performance bonds. He expressed concern about possible conflicts and litigation when each participant issues its own bonds. It would be desirable to have more information about projects that had used the IFOA model or variations of this model. Mr. Eckblad responded that five major projects had been built in Northern California using this model. Chancellor Hawgood stated that UCSF would examine this issue and these concerns before September.

Regent Estolano asked if UCSF would issue Requests for Qualifications for a single team with all participants or for each participant separately. Mr. Eckblad responded that UCSF would prefer to select individual team members separately. This would allow UCSF to build a team. Regent Estolano asked about the selection process. Mr. Eckblad explained that UCSF would choose the architect; then, together with the architect, choose the contractor; and then, together, the team would choose the subcontractors. It was a process of progressive selection.

Committee Chair Makarechian observed that, when UCSF chose an architect, the architect would not know which contractors and subcontractors it would have to work with. Mr. Eckblad responded that the architect and others participate in the selection process. This had been the case with the Mission Bay Hospital project and UCSF had received positive feedback about this.

Regent Sherman observed that many consultants and suppliers would be involved, which suggested greater expenses. He asked where the savings in this model would come from versus a traditional development model. Mr. Eckblad responded that savings occur in several ways. Change orders would be limited to only those allowed under any other normal contract, such as field conditions or a change of scope made by the owner. One could not issue a change order for a coordination issue.

Regent Sherman adumbrated a typical change order situation in which a contractor requests a shop drawing from the architect and requests a change order because the drawings were not fully detailed at time of the contractor's bid. He asked how the IFOA model would eliminate that typical situation. Mr. Eckblad responded that all participants sign one contract with equal accountability. Profit is placed in a central pool. Participants work at cost and do not receive profits unless the project is completed under budget and on time. The situation described by Regent Sherman arises frequently in the design and construction industry. In an IFOA, as the design drawings are being developed, all participants have ownership of this document. The participants are incentivized to ensure that the drawings are coordinated and to improve productivity.

In response to another question by Regent Sherman, Mr. Eckblad explained that, once the cost is validated in the initial stage, this is the budget and it is set. In order to receive profits, the participants must keep the direct cost under the target cost level.

Regent Sherman observed that the IFOA structure puts the collective profit at risk but puts no limit on the direct cost.

Committee Chair Makarechian suggested a separate meeting for further questions and answers about this important topic. Chair Pérez remarked that the IFOA model was significantly different from the models the Regents were used to. He agreed with the proposal for a separate meeting and suggested that the campus present case studies of hospital projects that have used this model and use that information to frame the conversation.

Regent Blum asked why UCSF would not conduct this project as it had the Mission Bay Hospital project. Chancellor Hawgood responded that UCSF had learned many lessons from the Mission Bay project and believed that this project could be even better.

12. **APPROACHES TO ADDRESS STUDENT HOUSING INSECURITY**

[Background material was provided to Regents in advance of the meeting, and a copy is on file in the Office of the Secretary and Chief of Staff.]

General Counsel Robinson reported that Committee Chair Makarechian had asked the Office of the General Counsel and others at the Office of the President to facilitate a discussion about requests that UC had been receiving from students that the University establish programs to allow students to sleep in their personal vehicles overnight in parking areas on University property. Programs known as safe parking programs, which allow individuals to sleep in their personal vehicles overnight, had been implemented by a number of municipalities, including San Jose, San Diego, and Los Angeles, to address the housing crisis in California. Mr. Robinson observed that, while safe parking programs might be an effective way for cities to manage the needs of countless unidentified homeless individuals with whom they have no previous established relationship, the situation for the University is very different. UC has established relationships with its students. As a matter of policy and its academic mission, the University strives to ensure that each student is able to meet his or her housing needs through an initial needs assessment and financial aid; these matters are discussed with students even before they arrive on campus. UC also has a number of established supplemental programs. Cities do not have control over who is a resident and implementation of the safe parking programs had been motivated to some extent by the prohibition on overnight parking on city streets and a commensurate obligation to identify alternative locations for homeless populations. Mr. Robinson also observed that meeting the legal and regulatory requirements to establish safe parking programs would be difficult and time-consuming; this might take years, to say nothing of the considerable safety, health, and security concerns. In Mr. Robinson's view, the University's time and resources would be better directed toward shoring up UC's analyses

and processes and, if necessary, bolstering the housing resources that are available to students.

Committee Chair Makarechian stated his understanding that implementing safe parking programs for students would involve changes in zoning and considerable risk. He suggested that this topic be moved to the agenda of the Special Committee on Basic Needs.

Regent Weddle stated that she would be happy to continue the discussion of this issue with the Special Committee on Basic Needs. She advised the University to make a distinction between permanent parking options for students and safe parking models, which are typically short-term and transitional. She would like to review questions about legality and permitting to determine if Mr. Robinson's statements would apply to short-term transitional programs.

The meeting adjourned at 4:10 p.m.

Attest:

Secretary and Chief of Staff

SUMMARY OF CONSULTING ACTUARY'S RECOMMENDATIONS REGARDING CHANGES IN ACTUARIAL VALUATION ASSUMPTIONS FOR UCRP

Economic Assumptions

Assumption	Description	Recommendation
Inflation	Affects projections of investment returns, active member salary increases, cost-of-living adjustments (COLA) for retirees	Decrease rate from 3.00 percent per annum to 2.75 percent per annum
Investment Return	Estimates average future net rate of return on assets over projected lifetime of the Plan as of the valuation date	Decrease rate from 7.25 percent per annum to 7.00 percent per annum
Individual Salary Increases	Includes components of inflation, real "across the board" (ATB) salary increases and merit and promotion (M-P) increases in salary.	• Inflation: see above • ATB: Maintain at 0.50 percent • M-P: Increases for both Faculty and Staff/Safety members
Administrative Expenses	Fees for administrative, legal, accounting and actuarial services, as well as routine costs for printing, mailings, computer-related activities and other functions carried out for Plan operation are paid from Plan assets.	Decrease load on Normal Cost from 0.50 percent of covered payroll to 0.40 percent of covered payroll

Non-Economic Assumptions

Assumption	Description	Recommendation
Retirement Rates for Members Retiring from Active Membership	Predicts the conditional probability of retirement at each age at which members are eligible to retire, given attainment of that age	1976 Tier Faculty: • < 20 years of service: Decreases • 20+ years of service: Decreases 1976 Tier Staff: • < 10 years of service: Decreases • 10-20 years of service: Decreases • 20+ years of service: Increases 2013 & 2016 Tier Faculty & Staff – Decreases Modified 2013 Tier Staff – Increases Safety Members – Increases New Assumption – No retirements occur until the next July 1 following the valuation date New Assumption – All future retirees with either a 1976 Tier benefit or Safety benefit will receive an increase in benefit reflecting the assumed Inactive COLA that occurs just prior to the member's July 1 retirement date.
Retirements for Members Retiring from Inactive Membership	Inactive vested members assumed to retire at a fixed age.	2013 & 2016 Tier Members – Increase from age 60 to age 63 Maintain at age 60 for all other inactive vested members
Refunds of Accumulations for Current Terminated Non-Vested Members	Current assumption: Immediate refund at valuation date	Change to assume receipt of refund over a five-year period

Non-Economic Assumptions (continued)

Assumption	Description	Recommendation
Mortality Rates for Non-disabled Members	Estimates the conditional probability of dying at each age, after attaining that age	Pre-Retirement – Change to the Pub-2010 Teacher Employee Amount-Weighted Above-Median Mortality Table, projected generationally with the two-dimensional mortality improvement scale MP-2018 Post-Retirement – Change to the Pub-2010 Healthy Teachers Employee Amount-Weighted Above-Median Mortality Table, projected generationally with the two-dimensional mortality improvement scale MP-2018. For Faculty, table rates adjusted by 90% for males and 95% for females. For Staff & Safety, table rates adjusted by 100% for males and 110% for females. Separate tables for males and females
Mortality Rates for Disabled Members	The probability of dying for members who are either receiving Disability Income or who have "crossed over" to receive retirement income is assumed to be different than for members not in this group.	Pre- and Post-Retirement – Use the Pub-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Table, projected generationally with two-dimensional mortality improvement scale MP-2018 Separate tables for males and females Members who have "crossed over" will continue to be valued using disabled mortality tables

Non-Economic Assumptions (continued)

Assumption	Description	Recommendation
Mortality Rates for Beneficiaries	Current assumption: Same as that used for healthy retirees	Pub-2010 Contingent Survivor Amount-Weighted Mortality Table, projected generationally with two-dimensional mortality improvement scale MP-2018. Table rates adjusted by 100% for males and 90% for females. Separate tables for males and females
Mortality for Actuarial Equivalence Basis	Mortality table used for converting Plan benefits under one form of payment to an actuarially-equivalent amount under a different form of payment	Change to "static" version that approximates generational mortality table recommended for non-disabled members above
Rates of Separation Prior to Retirement	Estimates the probability of leaving active UCRP membership after attaining each level of service credit	Overall decreases in the rates
Incidence of Disability	Estimates the probability of becoming disabled at each age	Overall decreases in the rates
Eligible Survivor Assumptions	Assumptions for how many non-retired members will have eligible survivors at retirement or pre-retirement death, the age of the eligible survivor(s) and the number of eligible survivors	Age difference of Member compared to Eligible Survivor: • Male Survivors – Reduce from three years older to two years older • Female Survivors – Maintain current assumption
Assumption for Unused Sick Leave Converted to Service Credit	Unused sick leave hours at separation are converted to service credit	Faculty and Staff – Maintain current assumption Safety – Increase in load from 1.90 percent to 2.00 percent
Lump Sum Cashout (LSC) Take-Rate	The rate at which retirement-eligible members opt to receive a LSC in lieu of monthly retirement income	Overall decreases in the rates

The recommendation for any current assumption not listed here is to maintain the current assumption for the July 1, 2019 valuation.

Attachment 2

SUMMARY OF CONSULTING ACTUARY'S RECOMMENDATIONS THAT ALSO APPLY TO OTHER UC BENEFIT PLANS

Recommended changes to also be applied to the actuarial valuations of other UC benefit plans—

UC-PERS Plus 5 Plan:

- Investment Return;
- Inflation; and
- Mortality Rates.

UC Retiree Health Benefit Program:

- Retirement Rates;
- Mortality Rates;
- Termination Rates;
- Incidence of Disability Rates;
- Conversion of Unused Sick Leave; and
- Lump Sum Cashout Take-Rate.