

TIAA Self-Directed Brokerage Account Customer Account Agreement

Brokerage accounts are provided by TIAA Brokerage, a division of TIAA-CREF Individual & Institutional Services, LLC, Member FINRA and SIPC, and are carried by Pershing LLC (“Pershing”), Member FINRA, NYSE, and SIPC, a subsidiary of The Bank of New York Mellon Corporation.

I. General terms and conditions

By signing the TIAA Brokerage Account Application (“Account Application”), I agree to be bound by the following terms and conditions, as well as the terms and conditions set forth in Sections II and III of this agreement (collectively, with the Account Application, this “Agreement”).

1. “I,” “me,” and “my” refer to the individual signing the Account Application. “TIAA” refers to TIAA Brokerage, a division of TIAA-CREF Individual & Institutional Services, LLC. “Custodian” refers to TIAA Trust, N.A. “Account” refers to the self-directed brokerage account opened with TIAA and carried by Pershing.
2. I understand that I have been authorized by my employer (“Plan Sponsor”), or other plan fiduciary, to establish an Account as an investment option under my employer-sponsored retirement plan or 403(b) plan or arrangement (“Plan”). I agree not to take any action that exceeds the authority granted to me under the Plan. By opening an Account, I understand that I am establishing a self-directed brokerage account with TIAA through the Plan. The Account will be established in the name of the Plan trustee (“Trustee”) and/or the Custodian of the Plan for my benefit. I shall be fully responsible for all investment decisions relating to my Account. I understand and accept the risks of investing through an individual brokerage account and accept responsibility for any losses I may incur as a result of such investments. I understand that it is my responsibility to follow all requirements for trading with TIAA and that if I refuse to comply, TIAA may, at its sole discretion, refuse to execute transactions for my Account or even terminate the Account. I understand that before placing any order, I am responsible for ensuring that the transaction will be in compliance with all TIAA policies, my Plan’s policies and any regulatory requirements. TIAA has no obligation to ensure compliance prior to accepting an order.
3. In connection with the establishment of my Account, I acknowledge that TIAA may accept from the Plan Sponsor, on my behalf, any instruction or authorization necessary to facilitate the transfer of any amounts and/or securities held at another institution to my Account, all without my consent. In connection with plan administration matters, including, but not limited to, the correction of errors relating to the remittance of contributions or a change of plan custodian, I acknowledge that the Plan Sponsor may, at its sole discretion, take any or all of the following actions with respect to my Account: (a) instruct and direct TIAA and/or Pershing to liquidate securities in my Account, (b) terminate my Account and (c) transfer assets in my Account to another institution, all without my consent.
4. If the Plan is an unfunded plan (e.g., a plan designed to meet the requirements of Internal Revenue Code (“IRC”) §457(b) as they apply to a nongovernmental private employer, or IRC §457(f)), then the assets of this Account shall be owned solely by the Plan Sponsor and shall be subject only to the claims of the Plan Sponsor’s general creditors. With respect to such unfunded plans, notwithstanding any provision in this Agreement to the contrary, the individual signing the Account Application has the sole right to direct the investment of assets held in the Account consistent with the terms of the Plan (provided that the Plan Sponsor may revoke such right at any time), and such individual shall not have any other rights or interests in the assets held in the Account or this Agreement. Instead, the Plan Sponsor shall have all rights and interests in this Agreement and the assets held in the Account, and may use such assets for any purpose it so desires.
5. I represent that I am of the age of majority, of legal capacity, and the information I have provided on my Account Application is accurate. I acknowledge that the Account is not for a foreign financial institution, private banking accounts or non-residents of the United States. I will notify TIAA of any change to the information provided on my

Account Application within 30 days of such change. I will promptly notify TIAA within 10 days if I become a director, a 10% beneficial shareholder, an affiliate of a publicly traded company, or if I become an employee of any securities exchange, self-regulatory organization or a corporation of which an exchange owns a majority of the capital stock.

6. I acknowledge that as a self-directed investor, I am solely responsible for deciding whether my brokerage transactions are suitable investments in light of my stated objectives and financial situation, and that none of Plan Sponsor, TIAA, Pershing, Custodian and Trustee is responsible for providing investment advice of any kind, including determining whether my transactions are suitable. I acknowledge and agree that I may not use this Account to invest in municipal securities or commodity futures contracts, purchase securities on margin and/or engage in any investment in which the risk of loss may exceed the value of my Account. If the Plan is subject to Internal Revenue Code Section 403(b), I understand and agree that I may only invest in shares of mutual funds.
7. I acknowledge that TIAA may provide me with market data or research relating to securities and securities markets, but does not guarantee the accuracy, completeness or timeliness of such information. Such market data or research is not personalized or in any way tailored to my personal financial circumstances or investment objectives, unless TIAA has otherwise specifically agreed in writing in connection with an advisory program. Other than in limited circumstances, TIAA limits the research available regarding mutual funds to certain mutual funds and shares classes of mutual funds that provide TIAA with a minimum level of compensation. I may be able to obtain research on such other mutual funds through other providers. I understand that employees of TIAA, Pershing, Plan Sponsor, Trustee and Custodian are not authorized to give any legal, tax or accounting advice, and I will not solicit or rely upon any such advice from TIAA, Pershing, Plan Sponsor, Trustee or Custodian, or any of their employees, whether in connection with transactions in or for any Account or otherwise.
8. I acknowledge that I will be charged a commission on applicable transactions and other account-related fees, including, but not limited to, service fees in accordance with the standard TIAA Commission and Fee Schedule, as in effect from time to time. TIAA receives remuneration in connection with the mutual funds that you invest in, including, but not limited to, money market funds and exchange-traded funds, including 12b-1 fees and other compensation from Pershing, or a mutual fund's distributor, transfer agent or investment adviser for marketing, shareholder servicing fees and/or distribution services. Additionally, Teachers Advisors, Inc., the investment adviser to TIAA-CREF Funds, and the advisory entities of TIAA's wholly owned subsidiary, Nuveen Fund Advisors, LLC, the investment adviser to the Nuveen Funds, receive fees from the mutual funds for investment advisory and/or fund administration services. See the respective mutual funds' prospectus or statement of additional information for mutual fund payment information. With certain exceptions, TIAA limits the mutual funds available for purchase through my account to mutual funds, or share classes of a mutual fund, that include a minimum level of compensation to TIAA. In some cases, TIAA makes available for purchase multiple share classes of mutual funds, including multiple share classes of the Nuveen Funds and TIAA-CREF Funds. However, not all share classes of all mutual funds may be available for purchase, including in some cases, the lowest cost share classes of mutual funds. We only provide mutual funds that are available through Pershing and where we have an agreement with the mutual fund family to offer their mutual funds. These agreements do not always include access to all share classes. Mutual fund purchases are subject to the initial and subsequent minimum investment amounts as set forth in the mutual funds' prospectuses. I may also be able to purchase other share classes of the mutual funds from the mutual funds directly or through other providers. The mutual funds available through the Platform, including available share classes of particular mutual funds, may change over time at TIAA's discretion. The fees charged with respect to any mutual fund classes that are now or in the future made available through the Platform may also change over time at TIAA's discretion or by the mutual fund itself. For more information on how TIAA gets paid for its products and services, please refer to our "Regulation Best Interest-Form CRS" located at the bottom of the home page of our website at https://www.tiaa.org/public/pdf/support/regbi/TIAA_FormCRS.pdf.
9. I acknowledge that any amounts I transfer to my Account from the Plan will be automatically transferred to a money market fund ("Fund") selected by the Plan Sponsor or other named fiduciary of the Plan. I may subsequently reinvest those amounts in my Account as I choose. I acknowledge TIAA will purchase Fund shares with any cash balances remaining in my Account at the conclusion of each business day. This activity will be reflected on my quarterly account statement in lieu of a daily confirmation. I understand, however, that I am entitled to confirmations of trade activity in my Account, and that confirmations will be provided to me upon my request. I have received/accessed and read a copy of the Fund prospectus, which contains a complete description and details of its fees and operation.
10. I acknowledge that I must instruct TIAA by telephone, online or other TIAA-designated channels to liquidate investments in my account in the Plan ("Plan Account") and transfer the resulting funds to my Account. I

acknowledge that any such liquidation and transfer may take several days to complete. I acknowledge that TIAA may transfer funds from my Plan Account, without notice, to my Account if necessary to cover outstanding debit balances in my Account, or that TIAA may liquidate my most recent purchase in my Account in order to cover any outstanding debit balances.

11. I acknowledge that, at the time I place a trade, I am solely responsible for ensuring that I have sufficient funds to cover my purchase. I also acknowledge that TIAA may review, reject, cancel or modify any securities transactions that I have entered at any time, for any reason and without prior notice to me; including where after three instances there are insufficient funds to cover the transaction(s). I authorize TIAA to accept my oral or electronic instructions for the purchase and sale of securities. I acknowledge that such instructions must be placed through TIAA-designated channels. TIAA will not accept orders or instructions sent via postal mail (including, but not limited to, U.S. mail or overnight delivery).
12. I acknowledge that TIAA may suspend or terminate my Account at any time, for any time and without prior notice to me. If I do not fund my Account within 30 days of Account opening or my account remains unfunded and inactive (no statement is generated) during any three-month consecutive period, TIAA reserves the right to close my account without prior notice to me. Once my account is closed, for any reason, TIAA reserves the right to reject any new account application submitted by me or on my behalf. In addition, if I maintain a small balance in my Account (for example, \$100 or less) during any consecutive three-month period, TIAA reserves the right to close my Account without prior notice to me. I shall have 30 days from receiving notice of termination of my Account to transfer all holdings from within my Account to my Plan Account. Should I fail to complete this transfer within 30 days, I direct the Plan Sponsor and/or TIAA to liquidate the Account holdings and make the transfer on my behalf. In the event my Account is liquidated, I agree to be liable for any resulting losses and costs incurred by TIAA. I may close my Account at any time by giving TIAA notice. I acknowledge that my Plan may require that any amount transferred from my Account back to my Plan Account first be transferred into a preselected holding investment, and that I am free thereafter to reallocate this amount within my Plan as I choose and as allowed by the Plan.
13. I acknowledge that I will pay in full for securities I purchase by the settlement date. For transactions not paid for by settlement date, TIAA shall have the right, without notice to me, to sell securities purchased.
14. TIAA may transfer securities or other property from any of my accounts to any of my other accounts in order to satisfy deficiencies in any of my accounts, except where prohibited by law. I grant TIAA the right of set-off against any other assets I hold at TIAA through my Plan in satisfaction of any debt in any other account, except where prohibited by law. I acknowledge and agree that (i) any such right of set-off is for the purpose of satisfaction of outstanding fees and expenses due with respect to any of my accounts, and (ii) should any set-off occur in accordance with this paragraph, I shall be considered to have directed payment of the applicable amount from the applicable account(s). I agree to pay any costs or expenses incurred by TIAA, including reasonable attorney fees that result from my failure to properly settle any securities transactions, pay any debt or otherwise satisfy my obligations under this Agreement. I acknowledge that my accounts may be subject to interest on any debit balances resulting from my failure to make payment in full for securities purchased from proceeds of sales paid prior to settlement date, or for other charges that may be made to the account(s).
15. Should my Plan allow for the purchase of individual equities, I acknowledge that various federal and state laws or regulations may be applicable to transactions in my Account regarding restricted securities, as defined by applicable securities laws and regulations. It is my responsibility to notify TIAA if my Account contains restricted securities and to ensure that any transaction I effect will conform to all applicable laws and regulations. I understand that transactions in restricted securities may take longer to process than transactions involving unrestricted securities. Additionally, I acknowledge TIAA is obligated by federal securities laws to provide my name, address and holdings information to issuers of those securities upon request, unless I instruct TIAA in writing not to do so. Notwithstanding the foregoing, TIAA may, at its discretion, refuse to permit restricted securities within my Account.
16. I acknowledge that this Agreement contains a pre-dispute arbitration clause. By signing an arbitration agreement, the parties agree to the following:
 - a. All parties to this Agreement are giving up the right to sue each other in court, including the right to a trial by jury, except as provided by the rules of the arbitration forum in which a claim is filed.
 - b. Arbitration awards are generally final and binding; a party's ability to have a court reverse or modify an arbitration award is very limited.

- c. The ability of the parties to obtain documents, witness statements and other discovery is generally more limited in arbitration than in court proceedings.
- d. The arbitrators do not have to explain the reason(s) for their award unless in an eligible case, a joint request for an explained decision has been submitted by all parties to the panel at least 20 days prior to the first scheduled hearing date.
- e. The panel of arbitrators will typically include a minority of arbitrators who were or are affiliated with the securities industry.
- f. The rules of some arbitration forums may impose time limits for bringing a claim in arbitration. In some cases, a claim that is ineligible for arbitration may be brought in court.
- g. The rules of the arbitration forum in which the claim is filed, and any amendments thereto, shall be incorporated into this Agreement.

ANY CONTROVERSY THAT SHALL ARISE BETWEEN THE ACCOUNT HOLDER AND TIAA, ITS AFFILIATES OR PERSHING (INCLUDING, BUT NOT LIMITED TO, CONTROVERSIES CONCERNING ANY ACCOUNT, ORDER OR TRANSACTION, OR THE CONTINUATION, PERFORMANCE OR BREACH OF THIS OR ANY OTHER AGREEMENT BETWEEN THE ACCOUNT HOLDER AND TIAA, ITS AFFILIATES OR PERSHING, WHETHER ENTERED INTO OR ARISING BEFORE, ON OR AFTER THIS ACCOUNT IS OPENED) SHALL BE SUBMITTED TO ARBITRATION BEFORE AND ONLY BEFORE THE FINANCIAL INDUSTRY REGULATORY AUTHORITY. ARBITRATION MUST BE COMMENCED BY SERVICE UPON THE OTHER PARTY OF A WRITTEN DEMAND FOR ARBITRATION OR A WRITTEN NOTICE OF INTENTION TO ARBITRATE, THEREIN INDICATING THE ARBITRATION TRIBUNAL. NO PERSON SHALL BRING PUTATIVE OR CERTIFIED CLASS ACTION TO ARBITRATION, NOR SEEK TO ENFORCE ANY PREDISPUTE ARBITRATION AGREEMENT AGAINST ANY PERSON WHO HAS INITIATED IN COURT A PUTATIVE CLASS ACTION, OR WHO IS A MEMBER OF A PUTATIVE CLASS WHO HAS NOT OPTED OUT OF THE CLASS WITH RESPECT TO ANY CLAIMS ENCOMPASSED BY THE PUTATIVE CLASS ACTION UNTIL: (I) THE CLASS CERTIFICATION IS DENIED; (II) THE CLASS IS DECERTIFIED; OR (III) THE CUSTOMER IS EXCLUDED FROM THE CLASS BY THE COURT. SUCH FORBEARANCE TO ENFORCE AN AGREEMENT TO ARBITRATE SHALL NOT CONSTITUTE A WAIVER OF ANY RIGHTS UNDER THIS AGREEMENT EXCEPT TO THE EXTENT STATED HEREIN. ANY ARBITRATION AWARD SHALL BE FINAL AND BINDING, AND ANY COURT HAVING JURISDICTION MAY ENTER JUDGMENT THEREON.

- 17. TIAA will have a lien against my Account assets for the discharge of any and all indebtedness or any other obligations I may have to TIAA, except where prohibited by law. In enforcing its lien, TIAA may, at its sole discretion, determine which securities and other property held in my Account are to be sold or which contracts should be closed, except where prohibited by law. I acknowledge and agree that (i) any such lien is for the purpose of satisfaction of outstanding fees and expenses due with respect to my Account, and (ii) I am solely responsible for the effects on my Account of the payment of any fee or expense from assets of my Account (including any such payment by reason of my deemed direction), whether or not from the Account. I acknowledge and agree that none of Plan Sponsor, TIAA, Pershing, Trustee and Custodian shall have any liability whatsoever with respect to the establishment of a lien pursuant to this paragraph. I agree to pay any costs or expenses incurred by TIAA, including reasonable attorney fees that result from my failure to properly settle any securities transactions, pay any debt or otherwise satisfy my obligations under this Agreement.
- 18. I understand that my Account includes a sweep program feature which automatically transfers available uninvested cash balances in my Account at the end of each business day to a money market fund or bank sweep deposit account, if applicable (each a "Sweep Vehicle" and together the "Sweep Program"), and facilitates the redemption of available shares of any such money market funds or the transfer of available cash balances from any such bank sweep deposit accounts to my Account to cover purchases of securities and other debits in my Account. Available Sweep Vehicles vary based on the account type. I direct TIAA to use the Sweep Vehicle indicated on my Account Application as the Sweep Vehicle for my Account and, if I fail to indicate a Sweep Vehicle, I direct TIAA to use the default Sweep Vehicle indicated therein. If my account type includes only one Sweep Vehicle, I acknowledge that the Sweep Vehicle set forth in the Account Application will serve as the sweep option in which all available uninvested cash balances in my Account will be allocated at the end of each business day. Different Sweep Vehicles may have different rates of return and different terms and conditions, including, but not limited to, requiring minimum cash balances in my Account before such balances may be swept to a Sweep Vehicle. Money market mutual funds are securities that are registered with the U.S. Securities and Exchange Commission ("SEC") under the Investment Company Act of 1940 and the Securities Act of 1933. Although money market funds attempt to maintain a stable net asset value of \$1 per share, there is no guarantee that the fund

will in fact maintain a \$1 per share stable net asset value. Money market funds are not insured by the Federal Deposit Insurance Corporation ("FDIC"). Money market funds are, however, securities subject to protection by the Securities Investor Protection Corporation ("SIPC") in the event of insolvency of Pershing, LLC as the brokerage firm holding my Account and cash or securities owed to me. SIPC is a nonprofit member corporation funded primarily by member securities brokerage firms registered with the SEC which protects customers up to certain limits in the event of the failure of a brokerage firm where cash and securities are owed to customers. See the TIAA Brokerage SIPC Asset Protection Guide for more information. SIPC does not protect against loss due to market fluctuation or failure of the issuer of a money market fund. More specific information about a particular money market mutual fund, including applicable fund restrictions, fees and expenses, and other important information can be found in the fund's prospectus. Bank sweep options are deposit accounts held at one or more banks. Deposit accounts pay interest on deposits pursuant to the terms and conditions in the disclosure document for the applicable bank sweep option. Interest rates may fluctuate and may vary among banks. Deposit accounts are not subject to SIPC protection. They are subject to FDIC insurance up to applicable limits. FDIC insurance protects against loss of deposit amounts in the event the bank holding the deposits fails. More specific information about particular bank sweep options, including applicable FDIC insurance limits, interest amounts and other important information can be found in the applicable bank sweep disclosure document. Prospectuses or similar disclosure documents for the Sweep Vehicle option(s) available for my Account are available by calling 800-842-2252. I agree to review these disclosure documents prior to opening my Account. I understand that TIAA may change the terms and conditions of the Sweep Program and the Sweep Vehicle options available for my Account, at its sole discretion. TIAA will provide me with written notice in advance of adding, changing or deleting Sweep Vehicle options for my Account or making other changes to the Sweep Program to the extent required by applicable law.

19. For the parties' mutual protection, I understand, agree and expressly consent to the electronic recordation of any of my telephone conversations with TIAA and to the monitoring of my electronic communications with TIAA, including, but not limited to, email and facsimile transmissions. I acknowledge that when I change any instruction on a limit order, I am responsible for any open order and any actions by me that modify or impact an open order. If I fail to take action, I understand that I will be responsible for any loss, including applicable commission charges. I am responsible for knowing the status of my pending orders and any duplication by me of a pending order will be considered authorized by me.
20. I acknowledge that TIAA will send all communications to me at the mailing address I provide on my Account Application, or at such other address as I may subsequently provide to TIAA in writing, and that all communications so sent in writing shall be deemed delivered, whether actually received or not. I acknowledge that I have a duty to timely review any confirmations or account statements for accuracy. I am responsible for notifying TIAA or Pershing immediately of any error or omission. If I fail to notify TIAA or Pershing of any error or omission within this time frame, the brokerage account statement and confirmations shall be presumed accurate.
21. I acknowledge that none of TIAA, Pershing,, Plan Sponsor, Trustee, Custodian and each service provider will be liable in any way to me or any other person for any inaccuracy, error or delay in, or omission of, any data, information or message, or the transmission or delivery of any data, information or message, or any loss or damages arising from or occasioned by any inaccuracy, error, delay or omission, nonperformance, interruption in data due to neglect or omission by any service provider, any "force majeure" (e.g., loss caused directly or indirectly by flood, fire, war, terrorism, civil unrest, strikes, natural disaster, extraordinary weather conditions, earthquake or other acts of God, government restrictions or actions, interruptions of communications, exchanges or market rulings, suspension of trading or other conditions beyond TIAA's control, failure, or equipment or software malfunction) or any other cause beyond the reasonable control of any service provider.
22. TIAA shall not be liable for any direct, indirect, incidental, special or consequential damages that may arise from its provision of services to me. None of Plan Sponsor, TIAA, Pershing, Custodian and Trustee, as the case may be, shall be liable for any losses incurred with respect to my investment selection and performance of the assets in my Account. TIAA shall have no responsibility for questioning my investment decisions. My Plan Sponsor may restrict certain securities from being available for investment in my Account. I alone am responsible for knowing and complying with these restrictions. None of Plan Sponsor, TIAA, Pershing, Trustee and Custodian, as the case may be, will monitor whether my trading activity is permissible under the Plan documents or consistent with the Employee Retirement Income Security Act of 1974, as amended, the Internal Revenue Code of 1986 or state law. Plan Sponsor, TIAA, Pershing, Trustee and Custodian may use and rely upon the services of clearing agencies, automatic data processing vendors, proxy processing, transfer agents, securities pricing services and other similar organizations; in such an event, none of Plan Sponsor, TIAA, Pershing, Trustee or Custodian shall be responsible for the acts and omissions of such third parties except to the extent that they occur as a result of the gross negligence or willful misconduct of Plan Sponsor, TIAA, Pershing, Trustee or Custodian.

23. I acknowledge that to deter frequent trading within mutual funds, a short-term redemption fee may be assessed against any transaction that results in mutual fund shares being held for less than six months. This fee is in addition to any short-term redemption fee or restriction the underlying mutual fund may independently assess against the same transaction. Each of TIAA, Pershing and/or Custodian reserves the right to restrict access to the purchase of mutual fund shares within any account deemed at their sole discretion to engage in excessive or abusive short-term trading patterns. Additionally, in the event Pershing, Trustee or Custodian, as the case may be, is instructed by the issuer of a mutual fund to restrict my access to such mutual fund's shares, such a restriction may remain in place until Pershing or the Custodian receives notice from the issuer to remove the restriction.
24. I agree that TIAA, Pershing, Trustee and or Custodian may place trading, disbursement or other full or partial restrictions on my account as deemed necessary, including but not limited to, the following circumstances: at the request of the security issuer, pursuant to a court order, tax levy, or garnishment; at the request of a government agency or law enforcement authority; in the event that my account is restricted (including, but not limited to, trading or trade-related violations); in the event that a deposit has not yet settled. I agree to abide by any such restriction and not to initiate trades or transactions which would violate the restriction. I agree to allow TIAA, Pershing, Trustee or Custodian to liquidate securities in my account to satisfy any request by the security issuer, court order, garnishment, tax levy, or other legal obligation imposed by a court or government agency. I also agree to allow TIAA, Pershing, Trustee or Custodian to liquidate securities in my account if such securities are no longer eligible for the account (i.e. if a mutual fund is converted to an exchange traded fund and exchange traded funds are not eligible investments for the account). Any proceeds from the liquidation would be deposited into the default sweep product. I agree not to hold Plan Sponsor, TIAA, Pershing, Trustee or Custodian liable for any trading losses, lost profits, tax obligation, or other damages resulting from liquidations or trading or disbursement restrictions imposed on my account in connection with a court order, tax levy, garnishment or other legal proceeding.
25. I acknowledge that if any provision or condition of this Agreement is held invalid or unenforceable for any reason by any court, regulatory or self-regulatory agency or body, such provision or condition shall be fully severable, and this Agreement shall be enforced and construed as if such provision or condition had never comprised a part of this Agreement.
26. I acknowledge that this Agreement cannot be modified by conduct and/or the failure of the Plan Sponsor, TIAA, Custodian, Trustee or Pershing at any time to enforce its rights hereunder to the greatest extent permitted by law, and shall not in any way be deemed to waive, modify or relax any of the rights granted to the Plan Sponsor, TIAA, Pershing, Trustee or Custodian.
27. I acknowledge that this Agreement constitutes the full and entire understanding between the parties with respect to the provisions herein, and that there are no oral or other agreements in conflict herewith. I acknowledge that TIAA and/or Pershing reserves the right to amend this Agreement, by modifying or rescinding any of its existing provisions or by adding any new provision at any time upon written notice to me on my brokerage account statement(s), trade confirmation(s) or such other written or electronic notification, including, but not limited to, posting notice of such amendment(s) and/or the amended Agreement on the TIAA Brokerage website. The amended Agreement will be effective as of the date established by TIAA and/or Pershing (the "Effective Date"). I agree that any future amendments made to the Agreement shall apply to my Account and to any other accounts established with TIAA in the future. The use of my Account after the Effective Date of the amendment(s) shall constitute my acknowledgement and agreement to be bound thereby. I am responsible for regularly checking for updates. I understand that additional restrictions may apply to the brokerage services provided hereunder and that additional documentation may be required by applicable law or by Plan Sponsor, TIAA, Pershing, Custodian or Trustee's policies and procedures. I agree to comply with any such restrictions and promptly provide any documents or information requested.
28. I acknowledge that the telephone, Internet, or any other electronic system and software provided for use in accessing my Account information is used at my sole risk. I further acknowledge that none of TIAA, its vendors providing data, information and other services, including, but not limited to, any exchange (collectively, "service providers"), warrant that the service will be uninterrupted or error free and that TIAA does not provide any warranty as to the results that may be obtained from any of these systems. I further acknowledge that the telephone, Internet and other electronic systems are provided on an as-is and as-available basis without warranties of any kind either expressed or implied, including, without limitation, those of merchant ability and fitness for a particular purpose, other than those warranties which are implied by and incapable of exclusion, restriction or modification. No service provider will be liable in any way to me or any other person for inaccuracy, error or delay in, or omission of, any data, information or message, or the transmission or delivery of any data, information or message, or any loss or damages arising from or occasioned by any inaccuracy, error, delay or

omission, nonperformance, interruption in data due to neglect or omission by any service provider, any “force majeure” (e.g., loss caused, directly or indirectly by flood, fire, war, terrorism, civil unrest, strikes, natural disaster, extraordinary weather conditions, earthquake or other acts of God, government restrictions or actions, interruptions of communications, exchanges or market rulings, suspension of trading or other conditions beyond TIAA’s control, failure, or equipment or software malfunction) or any other cause beyond the reasonable control of any service provider.

29. TIAA and Pershing, in their capacity as a clearing firm, may make the account communications available in an electronic form instead of mailing them in a paper form, according to the terms and conditions stated within the Electronic Delivery Terms and Conditions.
30. I acknowledge receipt of the TIAA Privacy Notices.
31. I acknowledge that complaints regarding my Account are to be mailed to: TIAA, P. O. Box 1280, Charlotte, North Carolina 28201, or I may call 800-842-2252.
32. Some account types may permit trading in a limited range of securities (e.g., mutual funds), and I acknowledge that I must follow the Plan Sponsor and TIAA policies and procedures in order to request expanded trading privileges for such accounts. I understand that such expanded trading privileges may not be granted. TIAA, Pershing and/or Custodian, in their sole discretion, may eliminate or restrict my ability to purchase particular securities, investments or other property due to volatility or other factors. I acknowledge that should my plan offer fractional share trading, I have reviewed and agree to the terms outlined within the Fractional Share Disclosure located at https://www.tiaa.org/public/pdf/f/Fractional_Share_Disclosure.pdf.
33. I agree that TIAA may assign this Agreement (in part or in full, and including assigning the role of clearing broker and custodian for the Account) to any third party or any subsidiary, affiliate or successor of TIAA. I hereby delegate and grant to TIAA the power and authority to make these changes on my behalf. TIAA will provide me with at least 30 days prior written notice of such assignment, and I will be deemed to have consented to the assignment if I conduct any transactions in my Account or keep my Account open subsequent to receiving such a notice.

II. Trusted Contacts

TIAA is committed to helping you protect your Account(s) and information. One way to protect your interests is to appoint a Trusted Contact. A Trusted Contact is someone over the age of 18 whom you know and trust. This person will serve as a point of contact should we have questions concerning your overall well-being and whereabouts, or if we suspect you may be the victim of fraud or exploitation. The individual(s) you select may not take any action on your Account and will not replace or affect existing powers of attorney. You should notify those you appoint as Trusted Contacts.

To appoint your Trusted Contact(s), log into your account at TIAA.org, click *Profile* at the top of the page. Within *More profile options*, click *Trusted Contacts* and complete the required Trusted Contact information, or contact us at 800-842-2252 to request a form to name a Trusted Contact.

Please note that TIAA, and its affiliates and representatives are authorized to contact the Trusted Contact(s) and disclose information about your Account(s) to address possible financial exploitation, to confirm the specifics of your current contact information, health status, or the identity of any legal guardian, executor, trustee or holder of a power of attorney, or as otherwise permitted under FINRA Rule 2165. Except as is required by FINRA Rule 2165, TIAA is under no obligation to interact with Trusted Contacts.

III. Role of Pershing

TIAA retained Pershing to act as a clearing broker for TIAA and provide certain recordkeeping and operational services, which may include execution and settlement of securities transactions and custody of securities and cash balances. These services are provided under a written Clearing Agreement between Pershing and TIAA. The respective roles of Pershing and TIAA, as defined within the Clearing Agreement, are outlined below.

1. In general, Pershing is only responsible for those services provided at the request or direction of TIAA as contemplated by the Clearing Agreement.
2. Pershing will create computer-based account records on the Account holder’s behalf in such name(s) and with such address(es) as TIAA directs.
3. Pershing will process orders for the purchase, sale or transfer of securities for the Account as TIAA directs.

Pershing is not obligated to accept orders for securities transactions directly from the Account holder and will do so only in exceptional circumstances.

4. Pershing will receive and deliver cash and securities for the Account and will record such receipts and deliveries according to information provided either by TIAA or directly, in writing, by the Account holder. Pershing is the only recipient of cash or checks for the Account by the Account holder.
5. Pershing will hold in custody securities and cash received for the Account, and will collect and disburse dividends and interest and process reorganization and voting instructions with respect to securities held in custody. Pershing is responsible for the custody of cash and securities only after it comes into Pershing's physical possession or control.
6. Pershing will prepare and transmit to the Account holder or provide facilities to TIAA for the preparation and transmission of confirmations of trades. Pershing will prepare and transmit to the Account holder periodic account statements summarizing the transaction history.
7. In connection with all of the functions that Pershing performs, Pershing maintains the books and records required by law and by business practice. Pershing will provide TIAA with written reports of all transactions processed for the Account to enable it to carry out its responsibilities under the Clearing Agreement. Pershing will assist the Account holder and TIAA with any discrepancies or errors that may occur in the processing of transactions for the Account.
8. PERSHING DOES NOT CONTROL, AUDIT OR OTHERWISE SUPERVISE THE ACTIVITIES OF TIAA OR ITS EMPLOYEES. PERSHING DOES NOT VERIFY INFORMATION PROVIDED BY TIAA REGARDING THE ACCOUNT OR TRANSACTIONS PROCESSED FOR THE ACCOUNT NOR UNDERTAKE RESPONSIBILITY FOR REVIEWING THE APPROPRIATENESS OF TRANSACTIONS ENTERED BY TIAA ON THE ACCOUNT HOLDER'S BEHALF. PERSHING MAY ACCEPT FROM TIAA, WITHOUT INQUIRY OR INVESTIGATION, (I) ORDERS FOR THE PURCHASE OR SALE OF SECURITIES, AND (II) OTHER INSTRUCTIONS CONCERNING YOUR ACCOUNT(S). PERSHING SHALL NOT BE RESPONSIBLE OR LIABLE FOR ANY ACTS OR OMISSIONS BY TIAA OR ITS EMPLOYEES. YOU UNDERSTAND THAT PERSHING PROVIDES NO INVESTMENT ADVICE NOR DOES PERSHING GIVE ADVICE OR OFFER ANY OPINION WITH RESPECT TO THE SUITABILITY OF ANY TRANSACTION OR ORDER. YOU UNDERSTAND THAT TIAA IS NOT ACTING AS THE AGENT OF PERSHING, AND YOU AGREE THAT YOU WILL IN NO WAY HOLD PERSHING, ITS OTHER DIVISIONS AND ITS OFFICERS, DIRECTORS AND AGENTS LIABLE FOR ANY TRADING LOSSES INCURRED BY YOU. YOU AUTHORIZE PERSHING TO ACT AS YOUR AGENT TO PURCHASE AND REDEEM FOR YOUR ACCOUNT SHARES OF THE FUNDS, AS PREVIOUSLY DEFINED, AND YOU AGREE THAT YOU SHALL NOT HOLD PERSHING, ITS OTHER DIVISIONS, AFFILIATES, OFFICERS, DIRECTORS OR AGENTS LIABLE FOR ANY TRADING LOSSES INCURRED.
9. The Clearing Agreement does not encompass transactions in commodities futures contracts or investments other than marketable securities, which Pershing normally processes on recognized exchanges and over-the-counter markets.
10. In furnishing its services under the Clearing Agreement, Pershing may use and rely upon the services of clearing agencies, automatic data processing vendors, proxy processing, transfer agents, securities pricing services and other similar organizations.
11. This statement addresses the basic allocation of functions regarding the handling of the Account. It is not meant as a definitive enumeration of every possible circumstance, but only as a general disclosure.

IV. Commission and fee schedule

Not all fees apply or are pertinent to all employer-sponsored plans. See individual plan for investment option details.

Equities and Exchange-Traded Funds (ETFs)

(All commissions and fees are per transaction, unless otherwise indicated.)

	Online/mobile TIAA.org/brokerage	Client Service Assistance 800-842-2252
Equity and Transaction-Fee ETFs	No charge	\$55
No-Transaction-Fee (NTF) ETFs	<ul style="list-style-type: none"> • NTF-eligible ETFs will have a \$0.00 commission, regardless of order size or holding period. • Any ETF shares purchased prior to January 26, 2018, and now identified as an NTF ETF, will still be charged a commission when the shares are sold, when placing the trade through the ATS or Client Service Assistance. 	
Equity notes	<ul style="list-style-type: none"> • Fees shown Fees shown reflect stock prices greater than \$1 per share. Orders to buy shares priced under \$1, restricted shares, non-permitted Cannabis Related Business (CRB) securities, foreign securities, privately held securities, shares without a market price or both a bid/ask will not be accepted. • Orders to sell shares priced under \$1 are handled via Client Service Assistance at the online commission rate given above, based on eligibility. 	
Financial Transaction Tax (FTT) Ordinary and ADR	<p>All opening transactions in FTT-eligible companies from the following countries will be subject to the FTT tax rate:</p> <ul style="list-style-type: none"> • French FTT at a rate of 0.30% of the total transaction cost. • Italian FTT at a rate between 0.10% and 0.20% of the total transaction cost. • Spanish FTT at a rate of 0.20% of the total transaction cost. 	
ADR agent servicing fee	Fee will generally range from \$0.01 to \$0.03 per share. Amounts will differ by ADR. Please refer to the ADR prospectus for specific fee and other information.	
Financial Industry Regulatory Authority (FINRA) Trading Activity Fee (TAF)	Varies per transaction/security. Visit www.finra.org/rules-guidance/guidance/trading-activity-fee for the current rates.	
Securities and Exchange Commission (SEC) Section 31 transaction fee	Varies per transaction. Visit SEC.gov for the current rate.	

Fixed income

(Bonds and CDs are available for purchase online. For assistance, call 800-842-2252.)

U.S. Treasury Securities

New issues (primary, at auction)	\$50 per transaction
Existing issues (secondary, already trading)	\$1 per \$1,000 face amount (\$50 minimum)
Other Fixed Income	
Municipal Bonds, Government Agency Bonds, Unlisted (Over-the-counter, or OTC) Corporate Bonds, and Mortgage-backed Securities ¹	\$50 + \$2 per bond
Certificates of Deposit – New Issues	Purchase minimums of \$5,000, no commission (interest rate reflects issuing bank's fee)

1. TIAA may execute certain fixed-income transactions for your Account on either an agency or principal basis. If we execute on an agency basis, the commissions listed above will apply. If we execute on a principal basis, we will sell a fixed-income product to you (or buy it from you), which we contemporaneously purchase from (or sell to) a dealer. If so, the net compensation earned by TIAA will include a mark-up. If we sell a fixed-income product to you, the mark-up is the difference between the sales price to you and the price we pay to purchase the product from a dealer. If we buy a fixed-income product from you, the mark-up is the difference between the sales price to the dealer and the price we pay to purchase the security from you.

Options

(All commissions and fees are per transaction, unless otherwise indicated.)

	Online/mobile TIAA.org/brokerage	Client Service Assistance 800-842-2252
Commissions and fees	No charge	\$55 + \$2.50 per contract
Options exercise/assignment	\$25	\$25

Mutual funds

No-Transaction-Fee (NTF) Funds

- Minimum initial investment for NTF mutual funds: The greater of either the listed amount in the fund's prospectus or \$500. Purchases below the stated minimum will be charged the appropriate transaction fee.
- Additional investments of NTF funds: The greater of either the listed amount in the fund's prospectus or \$100. Transactions of NTF funds for amounts less than \$500 will be subject to the appropriate transaction fee. Systematic (automatic recurring or dollar cost averaging) orders are excluded.

- Systematic (automatic recurring or dollar cost averaging) orders, no fee; minimum transaction of \$100.
- Short-term redemption fee: \$50 minimum for shares held less than six months (waived for shares transferred from another brokerage firm or financial institution). Additional redemption fees may apply as set forth in each fund's prospectus.

Transaction-Fee (TF) Funds

- Transaction fee, regardless of order size: \$35 per trade.
- Minimum initial investment for mutual funds: The greater of either the listed amount in the fund's prospectus or \$500.
- Additional investments: The greater of either the listed amount in the fund's prospectus or \$100.
- Systematic (automatic recurring or dollar cost averaging) order, no fee: minimum transaction of \$100.

Account maintenance fees

(All fees are per transaction, unless otherwise indicated.)

Alternate investment transaction/processing fee \$50

Custody/safekeeping fee for physical securities
(Excludes ADRs held with domestic custodian bank) \$10 per account, per position, per month

Direct registration system (DRS) outgoing transfer fee \$30 per security, per account

Foreign securities \$125 for each order (not applicable to American Depositary Receipts) + transaction fees and commission

Foreign security receive and deliver fee \$75

Post-effective reorganizations—Voluntary \$75

Reorganizations—Voluntary \$25

Special product fee—Registered REITs \$35 per position, charged at transfer and then annually

Special product fee—Unregistered REITs \$125 per position, charged at transfer and then annually

Transfers—Accommodation² \$80 per transfer

Transfers—Automated Clearing House (ACH) No charge

Transfers—GNMA, Restricted, Legal² \$140 per transfer

Transfers—Outgoing full account²

\$50 per transfer, no charge for partial transfers

Transfers—Register, transfer and ship²

\$80 per transfer, plus any third-party charges, including a DTCC charge of \$500

2. Checks in the amount of \$250,000 or more for transfers or payments will be sent via overnight delivery and a delivery fee of \$12 will be charged to the account.

TIAA Brokerage, a division of TIAA-CREF Individual & Institutional Services, LLC, Member FINRA and SIPC, reserves the right to change this fee and commission schedule at its discretion, subject to notification in accordance with applicable laws and regulations.

TIAA-CREF Individual & Institutional Services, LLC, Member FINRA and SIPC, distributes securities products. TIAA Brokerage, a division of TIAA-CREF Individual & Institutional Services, LLC, Member FINRA and SIPC, distributes securities. Brokerage accounts are carried by Pershing, LLC, a subsidiary of The Bank of New York Mellon Corporation, Member FINRA, NYSE, SIPC.

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