

This summary is provided to help you make informed decisions about the services, products and accounts offered by TIAA-CREF Individual & Institutional Services, LLC (“**TC Services**,” “**we**,” “**us**,” “**our**”), and includes important information about the recommendations we make and the fees we charge. TC Services is an affiliate of TIAA and is registered as a broker-dealer and investment adviser with the Securities and Exchange Commission. Broker-dealer and investment adviser services and fees differ, and it is important that you understand the differences. Free and simple tools are available to research firms and financial professionals at investor.gov/CRS. The site also provides educational materials about broker-dealers, investment advisers and investing.

1. What investment services and advice can you provide me?

We offer both broker-dealer and investment adviser services to retail investors. If you have a Plan, or are a participant of a Plan, we may use data from the Plan to provide these services to you. Plan sponsors do not review or endorse any services, accounts or products available outside of their Plans.

Broker-dealer services

As a broker-dealer we recommend:

- Employer-sponsored plans record kept by TIAA (“Plans”)
- Brokerage accounts offered by us
- Individual Retirement Accounts (“IRAs”) sponsored by TIAA (excluding managed account IRAs)
- Affiliated retirement annuity products available in Plans and IRAs
- Affiliated annuity products available outside of Plans and IRAs

Through our broker-dealer representatives and online tools and calculators we can:

- Recommend that you open, contribute or consolidate your assets (by rolling over or transferring) to accounts/products we recommend as a broker-dealer (listed above)
- Recommend that you purchase and sell specific investments for your Plans (where available), IRAs offered by TIAA (excluding managed account IRAs) and certain affiliated annuities, but not for brokerage accounts offered by us
- Recommend annuitizing affiliated annuity products to create lifetime income
- Buy and sell securities for your accounts at your direction
- Offer education and enrollment services that do not involve a recommendation

We are a distributor for TIAA-affiliated mutual funds and variable annuities and for certain state-issued education savings plans.

Our broker-dealer services are provided based on your needs at the time of the service.

Recommendations to purchase or sell specific investments for:

- **Plans**—limited to a menu of investments selected by the plan sponsor
- **IRAs offered by TIAA (excluding managed account IRAs)**—limited to a menu of TIAA-affiliated mutual funds, annuities and bank deposits

Our broker-dealer services and accounts/products we recommend as a broker-dealer are **not subject to minimums (other than for after-tax retirement annuities) and we do not provide ongoing monitoring**. Our recommendations are **non-discretionary**. **You make the ultimate decision** regarding the purchase or sale of investments.

Investment adviser services

As an investment adviser we recommend:

- Managed accounts we offer
- A third party advised donor-advised fund sub-advised by our affiliate, TIAA Wealth Investment Management LLC

Through our investment adviser representatives we can:

- Provide financial planning to help you understand your goals and make a plan to pursue them
- Recommend that you open, contribute or consolidate your assets (by rolling over or transferring) to accounts/products we recommend as an investment adviser (listed above)

Financial planning is provided based on your needs at the time of the service and **does not include any investment recommendations**. Your accounts **are not monitored** as part of this service, and **TC Services does not make any decisions** regarding the purchase or sale of investments in your accounts.

Our managed accounts include portfolios comprising mutual funds, exchange-traded funds (“**ETFs**”), and for certain programs, individual equity securities and/or bonds. Managed accounts are subject to minimums, and we provide ongoing monitoring and discretion.

Other Services

Separate from our broker-dealer and investment adviser services, we may also:

- Offer you nonsecurities products such as fixed annuity products
- Refer you to third-party providers for bank deposits, lending products, and document preparation services
- Refer you to TIAA Trust, N.A. for trust services, investment management, and in-Plan asset allocation and quarterly rebalancing services
- Refer you to TIAA-CREF Tuition Financing, Inc. for education savings
- Refer you to third-party agency for life and long-term care insurance needs.



Additional information

You can find detailed information about each of our broker-dealer and investment adviser services, the accounts/products we recommend, fees and costs at tiaa.org/relationshipdisclosures.



What to ask a representative

Given my financial situation, should I choose an investment advisory service? Should I choose a brokerage service? Should I choose both types of services? Why or why not?

How will you choose investments to recommend to me?

What is your relevant experience, including your licenses, education and other qualifications? What do these qualifications mean?

2. What fees will I pay?

There are fees associated with our broker-dealer and investment advisory services and the accounts/products we recommend (see fee chart on pages 2-3).

You will pay fees and costs whether you make or lose money on your investments. Fees and costs will reduce any amount of money you make on your investments over time. Please make sure you understand what fees and costs you are paying.

These fees create conflicts of interest. We have an incentive to encourage you to invest or consolidate your assets into the accounts/products we recommend because TC Services and its

affiliates and representatives are compensated when you do so. Specific conflicts of interest are addressed in the next question.



What to ask a representative

Help me understand how these fees and costs might affect my investments. If I give you \$10,000 to invest, how much will go to fees and costs, and how much will be invested for me?

Fee types and definitions

A fee is the principal amount you pay for the product or service. For more information about fees and their frequencies, see [tiaa.org/relationshipdisclosures](https://www.tiaa.org/relationshipdisclosures).

Account fees

These fees can include various account maintenance fees, transfer fees, a termination fee, contingent deferred sales charges or other charges that may be incurred upon the sale of a security transferred into an account at your request and/or redemption fees.

Asset-based wrap fees

The account's quarterly fee determined by the market value of assets in an account and inclusive of most transaction costs and fees charged by TC Services and its clearing firm.

Brokerage commissions

Fees for the purchase or sale of securities in an account.

Insurance fees

These fees can include state premium taxes, upfront sales loads, surrender charges, cost of insurance charges, administrative charges and mortality and expense risk charges.

Transaction fees

Transaction charges for each applicable transaction.

Asset-based fees

The account's monthly fee determined by the market value of assets in an account.

Referral fees

We may receive one-time or ongoing referral fees for referring you to affiliated or unaffiliated service providers.

General administrative expenses

Expenses charged to or deducted from Plan balances to pay service providers like TIAA for plan administrative service.

Investment expenses

Expenses associated with the investments held (i.e., funds), whether directly or in an account, as disclosed in a prospectus or similar document. Such expenses vary by product and share class and depend on the distribution arrangement we have in place with the product sponsor.

Surrender charge

Fee assessed if you withdraw funds from certain annuities including Multi-Year Guaranteed Annuities before a specified period.

What we recommend/provide	Fees
Broker-dealer services	
Plans	General administrative expenses, investment expenses
Brokerage accounts offered by us (including retail, IRA and accounts associated with employer-sponsored retirement plans)	Account fees, brokerage commissions, investment expenses, transaction fees Important: You are charged more when there are more trades in your account.
IRAs offered by TIAA (excluding managed account IRAs)	No brokerage commissions, except for brokerage account windows (which charge brokerage commissions and transaction fees), investment expenses
Affiliated annuities (available both in and out of Plans and IRAs)	Account fees, investment expenses

What we recommend/provide	Fees
Broker-dealer services	
Third-party life insurance products referrals	Commissions, insurance fees and/or investment expenses (we receive referral fees from a third-party agency)
Investment adviser services	
Financial planning	No fee (but if you choose an account/product we recommend or buy or sell securities after receiving financial planning services, you will pay the fees associated with that account/product, purchase or sale)
Managed accounts offered by us	Asset-based wrap fee, account fees, investment expenses, brokerage fees, transaction fees (Important : The more assets in your managed account, the more TC Services will receive in fees.)



Additional information

You should recognize there are differences between our investment adviser and broker-dealer services. The Regulation Best Interest standard extends to broker-dealer services and applies before or at the time of a recommendation. The fiduciary duty that extends to investment adviser services is an on-going obligation and investment advisers must review and, unless otherwise contractually agreed to, update their recommendations based on the client's changing needs and circumstances.

You can find more information about conflicts of interest specific to our investment adviser and broker-dealer services and accounts/products we recommend at tiaa.org/relationshipdisclosures.

3. What are your legal obligations to me when providing recommendations as my broker-dealer or when acting as my investment adviser? How else does your firm make money and what conflicts of interest do you have?

When we provide you with a recommendation as your broker-dealer or act as your investment adviser, we have to act in your best interest and not put our interest ahead of yours. At the same time, the way we make money creates some conflicts with your

interests. You should understand and ask us about these conflicts because they can affect the recommendations and investment advice we provide you. Here are some examples to help you understand what this means.



What to ask a representative

How might your conflicts of interest affect me, and how will you address them?

TC Services and/or TIAA affiliates benefit when:	This creates a conflict of interest that gives TC Services an incentive to:
You invest in TIAA-affiliated mutual funds, annuities, ETFs, CITs and certain third-party bank deposits because these products result in higher compensation to TC Services and/or TIAA affiliates than third-party products	Recommend (or invest your assets in) TIAA products or certain third-party bank deposit products over third-party products
You hold or own third-party mutual funds, exchange traded funds, annuities and third-party variable life insurance products because they result in compensation to TC Services and/or TIAA affiliates	Recommend (or invest your assets in) third-party products that result in compensation to TC Services and/or TIAA affiliates over other third-party products that compensate TC Services and/or TIAA affiliates less
We include on our platforms share classes of both proprietary as well as third-party mutual funds that pay us administrative, distribution and/or service fees	Offer a more expensive share class than a lower cost available alternative, even though higher investment expenses decrease your investment performance

TC Services and/or TIAA affiliates benefit when:	This creates a conflict of interest that gives TC Services an incentive to:
<p>Uninvested cash in your account is swept into a third-party cash sweep option or a limited selection of other cash sweep options (with whom TC Services and its clearing firm have an arrangement in place) because these cash sweep options result in higher compensation to TC Services and/or TIAA affiliates than other cash sweep options</p> <p>TC Services receives a portion of the yield paid by third-parties. You can receive higher returns through other cash sweep options</p>	<p>Offer cash sweep options that compensate TC Services more than other available cash sweep options, even if such options generate a higher yield for you than the options we include</p>
<p>You open, roll over, consolidate, annuitize from or transfer assets to your contract based on our recommendation to do so</p>	<p>Recommend that you move your assets to TIAA and/or create lifetime income/annuitize your contracts</p>
<p>You open, roll over, consolidate, or transfer assets to a self-directed brokerage or managed account maintained with our custody and clearing agent</p>	<p>Recommend that you move your assets to TIAA because TC Services earns custody and clearing fee credits for active accounts and new assets custodied and maintained at TC Service's clearing firm</p>

4. How do your financial professionals make money?

Our financial professionals are paid a salary plus bonuses. The bonus is primarily based on gathering and in some cases retaining client assets at TIAA. As a result, they have a conflict of interest. For more details, see [tiaa.org/relationshipdisclosures](https://www.tiaa.org/relationshipdisclosures).

Wealth Management Advisors (“WMAs”)

(Registered as both broker-dealer and investment adviser representatives)

Have an incentive to encourage you to bring in and keep assets at TIAA and enroll in accounts/products including, but not limited to:

- Plans, IRAs, Managed Accounts and after-tax annuities, where we compensate the same regardless of the account or product type
- Brokerage accounts, annuitization and referrals for Other Services (described above), where we incentivize differently, including among such products

Wealth Advisors (“WAs”)

(Registered as both broker-dealer and investment adviser representatives)

Have an incentive to encourage you to bring in and keep assets at TIAA as well as to enroll in accounts/products regardless of the particular account/product

- Are paid for making successful referrals to WMAs

Portfolio Managers

(Registered as investment adviser representatives)

Have an incentive to encourage you to keep accounts open and keep assets at TIAA

Other representatives

(Registered as broker-dealer representatives)

- Have an incentive to encourage you to bring in assets at TIAA as well as to enroll in accounts/products we recommend regardless of the particular account/product
- Are paid for making successful referrals to other financial professionals at TIAA regardless of the particular account/product

5. Do you or your financial professionals have legal or disciplinary history?

Yes. Visit investor.gov/CRS or brokercheck.finra.org for free and simple search tools to research TIAA-CREF Individual & Institutional Services, LLC and its financial professionals.



Additional information

For detailed information about our broker-dealer and investment adviser services and the accounts/products we recommend, go to [tiaa.org/relationshipdisclosures](https://www.tiaa.org/relationshipdisclosures).

For up-to-date information or a copy of this disclosure, please call **888-583-2535**.



What to ask a representative

As a financial professional, do you have any disciplinary history? For what type of conduct?

Who is my primary contact person? Are they a representative of an investment adviser or a broker-dealer?

Who can I talk to if I have concerns about how this person is treating me?



STEP 2: INVESTMENT OBJECTIVE AND EXPERIENCE (CONTINUED)

Commodities	Years of Experience	<input type="checkbox"/> Less than 1 year	<input type="checkbox"/> 1-2 years	<input type="checkbox"/> 3-4 years	<input type="checkbox"/> 5-9 years	<input type="checkbox"/> 10+ years
	Total Transactions per Year	<input type="checkbox"/> 0-9	<input type="checkbox"/> 10-14	<input type="checkbox"/> 15-24	<input type="checkbox"/> 25-74	<input type="checkbox"/> 75+
	Average Transaction Size	<input type="checkbox"/> \$0-\$9,999	<input type="checkbox"/> \$10,000-\$24,999	<input type="checkbox"/> \$25,000+		

STEP 3: OPTION LEVEL REQUEST (SELECT ONE.)

Level One: Covered Calls* (Capital Preservation, Income, Growth, Speculation) Level Two: Level One plus Long Calls and Puts (Speculation)

*Maximum level permitted for IRA, custodial, and conservator accounts

STEP 4: INDIVIDUAL PROFILE

Answers provided below will be used to determine approval and may change the investment profile on the above account number. This section must be completed by each ACCOUNT OWNER (Individual/Joint/IRA Account) OR AUTHORIZED PERSON (Corporate/Trust).

1. Primary Account Owner/Authorized Person (Corporate/Trust) Date of Birth (mm/dd/yyyy) Marital Status

 / / Married Other

Number of Dependents: **Note:** If blank, this indicates no dependents.

Unemployed or Retired If Employed, Self-Employed or Consultant, complete the following:

Employer's Name or Name of Business and Industry if Self-Employed Your Occupation/Title

Business Street Address City State Zip Code

Total Annual Income:

\$0-\$24,999 \$25,000-\$49,999 \$50,000-\$99,999 \$100,000-\$250,000 \$250,000+

Approximate Net Worth, Excluding Residence:

\$0-\$49,999 \$50,000-\$99,999 \$100,000-\$249,999 \$250,000-\$1 Million \$1 Million+

Liquid Net Worth:

\$0-\$14,999 \$15,000-\$24,999 \$25,000-\$49,999 \$50,000-\$99,999

\$100,000-\$199,999 \$200,000-\$499,999 \$500,000-\$999,999 \$1 Million+



STEP 4: INDIVIDUAL PROFILE (CONTINUED)

2. Additional Account Owner/Authorized Person Date of Birth (mm/dd/yyyy) / / Marital Status Married Other

Number of Dependents: **Note:** If blank, this indicates no dependents.

Unemployed or Retired If Employed, Self-Employed or Consultant, complete the following:

Employer's Name or Name of Business and Industry if Self-Employed Your Occupation/Title

Business Street Address City State Zip Code

Total Annual Income:

\$0-\$24,999 \$25,000-\$49,999 \$50,000-\$99,999 \$100,000-\$250,000 \$250,000+

Approximate Net Worth, Excluding Residence:

\$0-\$49,999 \$50,000-\$99,999 \$100,000-\$249,999 \$250,000-\$1 Million \$1 Million+

Liquid Net Worth:

\$0-\$14,999 \$15,000-\$24,999 \$25,000-\$49,999 \$50,000-\$99,999
 \$100,000-\$199,999 \$200,000-\$499,999 \$500,000-\$999,999 \$1 Million+

3. Additional Account Owner/Authorized Person Date of Birth (mm/dd/yyyy) / / Marital Status Married Other

Number of Dependents: **Note:** If blank, this indicates no dependents.

Unemployed or Retired If Employed, Self-Employed or Consultant, complete the following:

Employer's Name or Name of Business and Industry if Self-Employed Your Occupation/Title

Business Street Address City State Zip Code

Total Annual Income:

\$0-\$24,999 \$25,000-\$49,999 \$50,000-\$99,999 \$100,000-\$250,000 \$250,000+

Approximate Net Worth, Excluding Residence:

\$0-\$49,999 \$50,000-\$99,999 \$100,000-\$249,999 \$250,000-\$1 Million \$1 Million+

Liquid Net Worth:

\$0-\$14,999 \$15,000-\$24,999 \$25,000-\$49,999 \$50,000-\$99,999
 \$100,000-\$199,999 \$200,000-\$499,999 \$500,000-\$999,999 \$1 Million+



STEP 5: ACCOUNT OWNER(S)/AUTHORIZED PERSON(S) SIGNATURE(S) (REQUIRED)

By signing this application, you acknowledge that you have read and agree to the terms as specified in the Option Agreement provided, are in receipt of the Options Disclosure Document, **and acknowledge that you have read, understand, and agree to the terms and conditions of the TIAA Brokerage Account Customer Agreement. You also acknowledge that you have received and read the Predispute Arbitration Clause on Pages 2 and 3, Paragraphs 14 and 15 of the Option Agreement.**

To TIAA-CREF Individual & Institutional Services, LLC and Pershing LLC: In order to induce you to open or continue to maintain accounts for the undersigned for transaction in option contracts, however designated, including, without limitations, purchase, sale, transfer, exercise, and endorsement ("Option Transaction"), I ("Client") hereby warrant and represent that the above information is true and correct and agrees with you as set forth in the Option Agreement hereof.

This section must be signed and dated by each ACCOUNT OWNER (Individual/Joint/IRA Account) OR AUTHORIZED PERSON (Trust).

Note: For Trust accounts, the authorization to trade options must be reflected in the Trustee Certification of Investment Powers. Authorized individuals of the Trust must be Trustees named on the Trust.

Your Signature

(Primary Account Owner/Authorized Person)

Print Name and Title (if applicable)

Today's Date (mm/dd/yyyy)

 / / 20

Your Signature

(Additional Account Owner/Authorized Person)

Print Name and Title (if applicable)

Today's Date (mm/dd/yyyy)

 / / 20

Your Signature

(Additional Account Owner/Authorized Person)

Print Name and Title (if applicable)

Today's Date (mm/dd/yyyy)

 / / 20

PLEASE DO NOT WRITE IN THIS SPACE—FOR FINANCIAL ORGANIZATION USE ONLY:

Type of Option Trading:

Level 1 Level 2

Options Disclosure Mailed

Yes No

Date Mailed (mm/dd/yyyy)

/ / 20

	Initials	Date
A/C Control		
Compliance		
Customer Files		

Registered Options Principal

Today's Date (mm/dd/yyyy)

 / / 20




OPTIONS TO RETURN COMPLETED FORM(S)

Please return **all** numbered pages, including any pages you didn't need to complete.

OPTION 1: Use the TIAA mobile app to quickly upload your completed document(s). It's as simple as taking a picture.
Haven't downloaded the TIAA mobile app? Get it today in the **App Store** or **Google Play**.

Scan the **QR Code** to upload your documents.



OR

Tap the **Profile** icon in the lower-right corner of your screen, then tap **Upload files** and follow the step-by-step instructions.

OPTION 2: Use your personal computer to quickly upload your completed document(s).

Go to **tiaa.org/upload**, select **Upload files**, and follow the step-by-step instructions.

OPTION 3: If you prefer to fax or mail your completed documents, use the information provided below.

FAX:

800-914-8922 (within U.S.)

704-595-5795 (outside U.S.)

STANDARD MAIL:

TIAA

P.O. Box 1280

Charlotte, NC 28201-1280

OVERNIGHT DELIVERY:

TIAA

8500 Andrew Carnegie Blvd.

Charlotte, NC 28262



OPTION AGREEMENT**PLEASE RETAIN THIS FOR YOUR RECORDS.**

Meaning of terms in the Agreement: "Client" refers to the person(s) who signed this Option Agreement and Approval Form. "Pershing" refers to Pershing LLC. "TIAA Brokerage" refers to TIAA-CREF Individual & Institutional Services, LLC, which has introduced my (our) account to Pershing.

1. The Client acknowledges receipt of the notice pursuant to Financial Industry Regulatory Authority (FINRA) Rule 4311(d), which explains the contractual relationship between Pershing and TIAA Brokerage. The Client understands that this notice also appears on each of the Client's account statements. The Client understands that TIAA Brokerage is not acting as the agent of Pershing. The Client understands that Pershing merely accepts TIAA Brokerage orders for the purchase and sale of securities and instructions relating to other property in the Client's account, and that Pershing is not in a position, nor undertakes any responsibility, to give advice, make suitability determinations, supervise, or oversee TIAA Brokerage's handling of the responsibilities undertaken by TIAA pursuant to any agreement the Client may have with TIAA Brokerage.
2. The Client understands and is well aware that option trading may be highly speculative in nature. The Client is also aware that on certain days, option trading may cease and this could result in a financial loss to the Client. The Client agrees to hold TIAA Brokerage harmless for such loss. The Client further understands and agrees that TIAA Brokerage reserves the right to terminate, restrict, or reduce the Client's options trading privileges if it determines that the Client's trading activities or options positions present a risk to TIAA Brokerage.
3. The Client recognizes that by writing or selling an option contract (such as a call or put) without depositing the underlying security, the Client's risk of loss is potentially unlimited. The Client agrees to honor all assignments and to deliver the underlying security or the required funds in the prescribed time to TIAA Brokerage, and upon the Client's failure to do so in the proper time, TIAA Brokerage is hereby authorized to act as agent for the Client and to buy in or sell out such securities at the current market price or otherwise act to properly margin or complete the Client's obligation. The Client agrees to pay TIAA Brokerage a commission and fee for such service and to reimburse TIAA Brokerage for any loss incurred in connection therewith, and TIAA Brokerage is authorized to debit the Client's account for all such amounts.
4. The Client agrees that the Client is responsible for making all final decisions as to transactions effected in any account of the Client at TIAA Brokerage. The Client understands that each order the Client enters (to buy or to sell) must be complete as to security, quantity, price, and duration of the order.
5. The Client is willing and able to assume the financial risks and hazards of option trading, and the Client agrees that the Client will in no way hold Pershing or TIAA Brokerage responsible for such losses whether incurred through following TIAA Brokerage's trading recommendations or suggestions offered to the Client in good faith by TIAA Brokerage or through the Client's own decisions however arrived at by the Client.
6. The Client understands that any Option Transaction made for any account of the Client is subject to the rules, regulations, customs, and usages of the Options Clearing Corporation (OCC) and of the registered national securities exchange, national securities association, clearing organization, or market where such transaction was executed. The Client agrees to abide by such rules, regulations, and usages and the Client agrees that, acting individually or in concert with others, the Client will not exceed any applicable position or exercise limits imposed by such exchange, association, clearing organization, or other market with respect to option trading.
7. If the Client does not satisfy, on a timely basis, the Client's money or security calls, TIAA Brokerage is authorized in TIAA Brokerage's sole discretion, and without notification, to take any and all steps deemed necessary to protect TIAA Brokerage (for any reason) in connection with options transactions for the Client's account, including the right to buy and/or sell (including short or short exempt) for the Client's account and risk any part or all of the shares represented by options handled, purchased, sold, and/or endorsed by TIAA Brokerage for the Client's account or to buy for the Client's account and risk any option as TIAA Brokerage may deem necessary or appropriate. Any and all expenses or losses incurred in this connection will be reimbursed by the Client.



OPTION AGREEMENT (CONTINUED)

8. The Client bears full responsibility for taking action to exercise an option contract, provided, however, that with respect to certain expiring options, TIAA Brokerage is authorized to permit exercise by exception to take place automatically pursuant to the rules of the OCC as in effect from time to time unless the Client specifically advises TIAA Brokerage to the contrary in writing. This procedure affects options that are in the money by a predetermined amount as set forth in the rules of the OCC. Additional information regarding this procedure is available upon the Client's written request.
9. In addition to the terms and conditions hereof, the Client's options account will be subject to all of the terms and conditions of all other agreements heretofore or hereafter at any time entered into with TIAA Brokerage relating to the purchase and sale of securities except to the extent that such other agreements are contrary to or inconsistent herewith.
10. This agreement shall apply to all puts or calls that you may have executed, purchased, sold, or handled for any account of the Client and also shall apply to all puts or calls that you may hereafter purchase, sell, handle, or execute for any account of the Client.
11. The Client agrees to advise TIAA Brokerage of any changes in the Client's financial situation or investment objective insofar as the Client deems such changes material to the Client's options transactions.
12. The Client has received from TIAA Brokerage the most recent Options Disclosure Document and Definitive Supplement. The Client has read and understands the information contained in these documents.
13. The Client understands that TIAA Brokerage assigns exercise notices on a random basis. The Client understands that upon the Client's request, TIAA Brokerage will provide the Client with further information regarding the procedure used to assign exercise notices. The random selection method is automated insofar as a random four-digit number is manually entered into a system, which uses an algorithm to derive the allocation of the assignment. A report is then generated listing the accounts to be assigned and the number of contracts assigned per affected account. In the event that a manual assignment allocation must be performed due to a system failure, the manual allocation follows the same logic as the automated method and will be subject to all of the terms and conditions of all other agreements heretofore or hereafter at any time entered into with TIAA Brokerage relating to the purchase and sale of securities except to the extent that such other agreements are contrary to or inconsistent herewith.

14. ARBITRATION DISCLOSURES:

THIS AGREEMENT CONTAINS A PREDISPUTE ARBITRATION CLAUSE. BY SIGNING AN ARBITRATION AGREEMENT, THE PARTIES AGREE AS FOLLOWS:

- **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.**
- **ARBITRATION AWARDS ARE GENERALLY FINAL AND BINDING; A PARTY'S ABILITY TO HAVE A COURT REVERSE OR MODIFY AN ARBITRATION AWARD IS VERY LIMITED.**
- **THE ABILITY OF THE PARTIES TO OBTAIN DOCUMENTS, WITNESS STATEMENTS, AND OTHER DISCOVERY IS GENERALLY MORE LIMITED IN ARBITRATION THAN IN COURT PROCEEDINGS.**
- **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.**
- **THE PANEL OF ARBITRATORS WILL TYPICALLY INCLUDE A MINORITY OF ARBITRATORS WHO WERE OR ARE AFFILIATED WITH THE SECURITIES INDUSTRY.**
- **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.**
- **THE RULES OF THE ARBITRATION FORUM IN WHICH THE CLAIM IS FILED, AND ANY AMENDMENTS THERETO, SHALL BE INCORPORATED INTO THIS AGREEMENT.**



OPTION AGREEMENT (CONTINUED)

15. ARBITRATION AGREEMENT:

ANY CONTROVERSY THAT SHALL ARISE BETWEEN THE ACCOUNT HOLDER AND TIAA BROKERAGE, PERSHING AND/OR THE CUSTODIAN (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 BROKERAGE, PERSHING, AND/OR THE CUSTODIAN, 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.

THE LAWS OF THE STATE OF NEW YORK GOVERN.

