



Institutional Investors Organization Resolution Form

July 2022

Use *this form* to identify the authorized signatories and additional authorized persons who are authorized to act on Vanguard mutual fund and/or Vanguard Brokerage Services® (Vanguard Brokerage) accounts on behalf of an organization (including corporations, partnerships, limited liability companies or partnerships, professional corporations or associations, endowments, business trusts, and other entities). Print in capital letters and use black ink.

Questions?

Institutional Investment Services:
800-950-0053

Intermediary Services:
800-669-0498

Once Vanguard has completed this form on file, authorized individuals will not need to provide a certified resolution with each written transaction request. The authority granted in this Institutional Investors Organization Resolution Form remains in effect until Vanguard is notified that it has been revoked or a new Institutional Investors Organization Resolution Form has been submitted. You must file a new Exhibit A—Additional Authorized Persons Form when there is any change in the identity of the additional authorized persons able to act on behalf of your organization.

This form requires the signature of two authorized officers or signatories from your organization, one of whom must be the secretary or other authorized person who can certify the names of those authorized to act. If your organization has only one authorized signatory, then a bank officer, practicing attorney, or member of a domestic stock exchange must countersign this form.

For Vanguard Brokerage Accounts only: Include a current copy of your organization's document that confirms that the individuals listed in Section 2 and Exhibit A are authorized to act (e.g., your corporate secretary's certificate, operating agreement, board minutes, or a similar document).

Where noted in Section 2 and/or Exhibit A, each authorized signatory or additional authorized person for a Vanguard Brokerage Account must check one or both boxes to indicate any associations or affiliations that apply. **If the first box is checked, the authorized signatory or additional authorized person must include with this form a letter of account approval from the associated organization's compliance officer.** Upon written request of the member firm, we'll automatically send duplicate copies of confirmations, statements, or other information. Failure to include an approval letter may delay the processing of your form. An account approval letter isn't needed for FINRA, New York Stock Exchange, or Vanguard employees.

1. Organization information

**Required information*

Provide your
organization's
full legal
name. >

*Name of organization		
*Mailing address		
*Street address if different from the mailing address		
*City	*State	*Zip
*Employer/Taxpayer ID number		*Phone area code, number, extension

2. Authorized signatories

This section is to be used to identify any person who will be authorized to sign documents on behalf of the organization for a Vanguard account, also known as an authorized signatory. It should be completed by the officers, general partners, managing members, or any other person who should have this authorization.

A number is required in each box.

Number of authorized signatories that will be required to sign documents related to the organization's accounts.

Total number of authorized signatories (listed in this section) and additional authorized persons (listed in Exhibit A) that will be required to sign written transaction instructions related to the organization's accounts. This number must be greater than zero.

This certification is intended for all parties of the organization who will be authorized signatories on a brokerage account. All authorized signatories of brokerage accounts will be required to provide all of the information below as well as a signature.

The individuals listed below can act on an organization's account as follows:

1. Sign documents relating to Vanguard mutual fund and Vanguard Brokerage Accounts owned by the organization.
2. Invest the assets of the organization.
3. Obtain account information and give instructions for the purchase, sale, exchange, or transfer of securities.
4. Engage in margin and options trading on Vanguard Brokerage Accounts owned by the organization.

Return ALL pages of this form, even if some sections are left blank.

Authorized signatories must complete and sign. >

If you check this box, a letter of account approval is required for Vanguard Brokerage Accounts. (See page 1.) >

Name of authorized signatory <i>first, middle initial, last</i>		Title
Primary residence address		
Date of birth <i>mm/dd/yyyy</i>	SSN or ITIN <i>for nonresident aliens</i>	
Signature X		Date <i>mm/dd/yyyy</i>
Check this box if you're 1) an employee of FINRA or 2) associated with a member of a stock exchange, a FINRA member firm, or a municipal securities dealer.		
Check this box if you are, or if a household member is, a control person or an affiliate of a public company, as defined in SEC Rule 144 (including, but not limited to, 10% shareholders, policymaking executives, and members of the board of directors). If this box is checked, you must provide the names and trading symbols of the companies for which such person serves as a control person or an affiliate.		
Name of company		Trading symbol
Check this box if you're a Vanguard employee.		Check this box if your spouse is a Vanguard employee.

Authorized signatories must complete and sign. >

If you check this box, a letter of account approval is required for Vanguard Brokerage Accounts. (See page 1.) >

Name of authorized signatory <i>first, middle initial, last</i>		Title
Primary residence address		
Date of birth <i>mm/dd/yyyy</i>	SSN or ITIN <i>for nonresident aliens</i>	
Signature X		Date <i>mm/dd/yyyy</i>
Check this box if you're 1) an employee of FINRA or 2) associated with a member of a stock exchange, a FINRA member firm, or a municipal securities dealer.		
Check this box if you are, or if a household member is, a control person or an affiliate of a public company, as defined in SEC Rule 144 (including, but not limited to, 10% shareholders, policymaking executives, and members of the board of directors). If this box is checked, you must provide the names and trading symbols of the companies for which such person serves as a control person or an affiliate.		
Name of company		Trading symbol
Check this box if you're a Vanguard employee.		Check this box if your spouse is a Vanguard employee.

Copy this page to list additional authorized signatories.

Return ALL pages of this form, even if some sections are left blank.

Authorized signatories must complete and sign. >

If you check this box, a letter of account approval is required for Vanguard Brokerage Accounts. (See page 1.) >

Name of authorized signatory <i>first, middle initial, last</i>		Title
Primary residence address		
Date of birth <i>mm/dd/yyyy</i>	SSN or ITIN <i>for nonresident aliens</i>	
Signature X		Date <i>mm/dd/yyyy</i>
Check this box if you're 1) an employee of FINRA or 2) associated with a member of a stock exchange, a FINRA member firm, or a municipal securities dealer.		
Check this box if you are, or if a household member is, a control person or an affiliate of a public company, as defined in SEC Rule 144 (including, but not limited to, 10% shareholders, policymaking executives, and members of the board of directors). If this box is checked, you must provide the names and trading symbols of the companies for which such person serves as a control person or an affiliate.		
Name of company		Trading symbol
Check this box if you're a Vanguard employee.		Check this box if your spouse is a Vanguard employee.

Authorized signatories must complete and sign. >

If you check this box, a letter of account approval is required for Vanguard Brokerage Accounts. (See page 1.) >

Name of authorized signatory <i>first, middle initial, last</i>		Title
Primary residence address		
Date of birth <i>mm/dd/yyyy</i>	SSN or ITIN <i>for nonresident aliens</i>	
Signature X		Date <i>mm/dd/yyyy</i>
Check this box if you're 1) an employee of FINRA or 2) associated with a member of a stock exchange, a FINRA member firm, or a municipal securities dealer.		
Check this box if you are, or if a household member is, a control person or an affiliate of a public company, as defined in SEC Rule 144 (including, but not limited to, 10% shareholders, policymaking executives, and members of the board of directors). If this box is checked, you must provide the names and trading symbols of the companies for which such person serves as a control person or an affiliate.		
Name of company		Trading symbol
Check this box if you're a Vanguard employee.		Check this box if your spouse is a Vanguard employee.

Copy this page to list additional authorized signatories.

Return ALL pages of this form, even if some sections are left blank.

3. Certification and indemnification

On behalf of the organization identified in Section 1 of this Institutional Investors Organization Resolution Form (the "organization"), we hereby represent, agree, and certify:

- We are duly authorized by resolution of the board of directors or other governing body of the organization, or by the organization's charter or other organizing document, to identify the authorized signatories who may give The Vanguard Group, Inc., Vanguard Marketing Corporation, and their affiliates (collectively, "Vanguard") instructions, as those instructions are described in this form.
- Vanguard may accept and act on instructions it reasonably believes were received from any authorized signatory named in Section 2 of this form, and Vanguard shall have no liability for accepting and acting on such instruction.
- Vanguard has no duty whatsoever to question any instruction received from an authorized signatory or the suitability of any transaction requested by him/her/them.
- The authority granted to an authorized signatory on this form shall remain in full force and effect until Vanguard has received notice of a change of authority, or revocation of authority, or a change in the identity of any authorized signatory, and has had a reasonable period of time to act upon such notice. Any change in authority or revocation of authority will not affect any liability resulting from transactions or instructions initiated before Vanguard has had a reasonable period of time to act upon such notice.
- An authorized signatory, as identified on the then current Institutional Investors Organization Resolution Form on file with Vanguard, must timely notify Vanguard, in a form and manner acceptable to Vanguard, of any change or revocation of the authority or identity of any authorized signatory.
- The organization agrees to indemnify and hold Vanguard, each of the investment company members of The Vanguard Group, and their respective officers, employees, and agents (collectively, the "Vanguard entities") harmless from and against all losses, claims, and expenses (including attorneys' fees) of any kind incurred by the Vanguard entities for relying in good faith upon instructions provided in this form and for acting on instructions believed by Vanguard to have originated from any authorized signatory.

The organization has authorized and directed us to represent, agree, and certify the above.

The following statement applies to organizations that may engage in options trading:

I/We understand the investment objectives and trading plan of the registered account owner(s) and will only use trading strategies that are consistent with these objectives and plans.

I/We acknowledge that I/we have received from the registered account owner(s) or I/we already possess copies of the Vanguard Brokerage Option Application and Vanguard Brokerage Option Account Agreement (Option Agreement), and I/we have read and understand them. I/We also acknowledge that if the registered account owner(s) is/are approved for options trading, the owner(s) will be sent the booklet Characteristics and Risks of Standardized Options. I/We agree to read the booklet before conducting any trades in the registered account owner's (s') account. I/We also accept all of the terms and conditions of the Option Agreement.

I/We acknowledge receiving a copy of the Option Agreement, which contains a predispute arbitration clause highlighted in paragraphs 14 and 15 on page 3. By signing this application, I/we agree to be bound by the terms of the Option Agreement.

Complete > and sign here.	Name of authorized signatory/corporate officer <i>first, middle initial, last</i>	Title
	Signature ✗	Date <i>mm/dd/yyyy</i>
Complete > and sign here.	Name of authorized signatory/corporate officer <i>first, middle initial, last</i>	Title
	Signature ✗	Date <i>mm/dd/yyyy</i>

4. Third-party certification

If the organization has only one person authorized to sign documents on its behalf, a bank officer, practicing attorney, or member of a domestic stock exchange must certify to the following:

I certify that the person identified, and whose signature appears in Section 3, is authorized by the organization identified in Section 1 to make the representations, agreements, and certifications made on this form.

Required if the organization has only one person authorized by the organization to sign documents on its behalf. >

Name <i>first, middle initial, last</i>	Title
Signature X	Date <i>mm/dd/yyyy</i>
Name of bank or firm	

Submitting to Vanguard

Make a copy of the completed form for your records. This form must be signed by an authorized signatory on behalf of your firm.

Submit the completed, signed, and dated form to Vanguard via one of the methods below. If you're an existing web user, you may upload the form directly.

Fax: 484-582-2806

P.O. box address > Vanguard
(all USPS mail) P.O. Box 982903
El Paso, TX 79998-2903

Street address > Vanguard
(all FedEx or UPS mail) 5951 Lockett Court, Suite A3
El Paso, TX 79932

Vanguard Brokerage Services is a division of Vanguard Marketing Corporation, member FINRA.

Return ALL pages of this form, even if some sections are left blank.

Institutional Investors Organization Resolution Form Exhibit A—Additional Authorized Persons

July 2022

In addition to the authorized signatories listed in Section 2 of the Vanguard Institutional Investors Organization Resolution Form, identify additional authorized persons who are authorized to conduct transactions for your organization's Vanguard mutual fund and/or Vanguard Brokerage Accounts. The additional authorized persons are not authorized to execute any documents in connection with the organization's accounts.

Each of the additional authorized persons identified in Exhibit A is authorized to act on behalf of the organization in connection with any Vanguard mutual fund and/or Vanguard Brokerage Accounts owned by the organization; obtain information and give instructions for the purchase, sale, exchange, or transfer of securities; and engage in margin and options trading on Vanguard Brokerage Accounts owned by the organization.

If submitting Exhibit A only, this form must be signed by authorized signatories, as identified in Section 2 of the Organization Resolution on file with Vanguard.

Note: Each filing of an updated Exhibit A revokes the Exhibit A previously filed with Vanguard.

1. Organization information

Provide your
organization's
full legal name. >

*Name of organization		
*Mailing address		
*Street address if different from the mailing address		
*City	*State	*Zip
*Employer/Taxpayer ID number	*Phone area code, number, extension	

2. Additional authorized persons

Authorized signatories must complete and sign. >

If you check this box, a letter of account approval is required for Vanguard Brokerage Accounts. (See page 1.) >

Name of authorized signatory <i>first, middle initial, last</i>		Title
Primary residence address		
Date of birth <i>mm/dd/yyyy</i>	SSN or ITIN <i>for nonresident aliens</i>	
Signature X		Date <i>mm/dd/yyyy</i>
Check this box if you're 1) an employee of FINRA or 2) associated with a member of a stock exchange, a FINRA member firm, or a municipal securities dealer.		
Check this box if you are, or if a household member is, a control person or an affiliate of a public company, as defined in SEC Rule 144 (including, but not limited to, 10% shareholders, policymaking executives, and members of the board of directors). If this box is checked, you must provide the names and trading symbols of the companies for which such person serves as a control person or an affiliate.		
Name of company		Trading symbol
Check this box if you're a Vanguard employee.		Check this box if your spouse is a Vanguard employee.

Authorized signatories must complete and sign. >

If you check this box, a letter of account approval is required for Vanguard Brokerage Accounts. (See page 1.) >

Name of authorized signatory <i>first, middle initial, last</i>		Title
Primary residence address		
Date of birth <i>mm/dd/yyyy</i>	SSN or ITIN <i>for nonresident aliens</i>	
Signature X		Date <i>mm/dd/yyyy</i>
Check this box if you're 1) an employee of FINRA or 2) associated with a member of a stock exchange, a FINRA member firm, or a municipal securities dealer.		
Check this box if you are, or if a household member is, a control person or an affiliate of a public company, as defined in SEC Rule 144 (including, but not limited to, 10% shareholders, policymaking executives, and members of the board of directors). If this box is checked, you must provide the names and trading symbols of the companies for which such person serves as a control person or an affiliate.		
Name of company		Trading symbol
Check this box if you're a Vanguard employee.		Check this box if your spouse is a Vanguard employee.

Copy this page to list additional authorized persons.

Return ALL pages of this form, even if some sections are left blank.

Authorized signatories must complete and sign. >

If you check this box, a letter of account approval is required for Vanguard Brokerage Accounts. (See page 1.) >

Name of authorized signatory <i>first, middle initial, last</i>		Title
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Authorized signatories must complete and sign. >

If you check this box, a letter of account approval is required for Vanguard Brokerage Accounts. (See page 1.) >

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Signature X		Date <i>mm/dd/yyyy</i>
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Check this box if you are, or if a household member is, a control person or an affiliate of a public company, as defined in SEC Rule 144 (including, but not limited to, 10% shareholders, policymaking executives, and members of the board of directors). If this box is checked, you must provide the names and trading symbols of the companies for which such person serves as a control person or an affiliate.		
Name of company		Trading symbol
Check this box if you're a Vanguard employee.		Check this box if your spouse is a Vanguard employee.

Copy this page to list additional authorized signatories.

Return ALL pages of this form, even if some sections are left blank.

3. Certification and indemnification

On behalf of the organization identified in Section 1 of this Exhibit A (the "organization"), we hereby represent, agree, and certify:

- We are duly authorized by resolution of the board of directors or other governing body of the organization, or by the organization's charter or other organizing document, to identify additional authorized persons who may give The Vanguard Group, Inc., Vanguard Marketing Corporation, and their affiliates (collectively, "Vanguard") instructions, as those instructions are described in this Exhibit A.
- Vanguard may accept and act on instructions it reasonably believes were received from any additional authorized person named in this Exhibit A, and Vanguard shall have no liability for accepting and acting on such instruction.
- Vanguard has no duty whatsoever to question any instruction received from an additional authorized person or the suitability of any transaction requested by him/her/them.
- The authority granted to an additional authorized person on this Exhibit A shall remain in full force and effect until Vanguard has received notice of a change of authority, or revocation of authority, or a change in the identity of any additional authorized person, and has had a reasonable period of time to act upon such notice. Any change in authority or revocation of authority will not affect any liability resulting from transactions or instructions initiated before Vanguard has had a reasonable period of time to act upon such notice.
- An authorized signatory, as identified on the then current Organization Resolution on file with Vanguard, must timely notify Vanguard, in a form and manner acceptable to Vanguard, of any change or revocation of the authority or identity of any additional authorized person identified in this Exhibit A.
- The organization agrees to indemnify and hold Vanguard, each of the investment company members of The Vanguard Group, and their respective officers, employees, and agents (collectively, the "Vanguard entities") harmless from and against all losses, claims, and expenses (including attorneys' fees) of any kind incurred by the Vanguard entities for relying in good faith upon instructions provided in this Exhibit A and for acting on instructions believed by Vanguard to have originated from any additional authorized person.

The organization has authorized and directed us to represent, agree, and certify the above.

The following statement applies to organizations that may engage in options trading:

I/We understand the investment objectives and trading plan of the registered account owner(s) and will only use trading strategies that are consistent with these objectives and plans.

I/We acknowledge that I/we have received from the registered account owner(s) or I/we already possess copies of the Vanguard Brokerage Option Application and Vanguard Brokerage Option Account Agreement (Option Agreement), and I/we have read and understand them. I/We also acknowledge that if the registered account owner(s) is/are approved for options trading, the owner(s) will be sent the booklet *Characteristics and Risks of Standardized Options*. I/We agree to read the booklet prior to conducting any trades in the registered account owner's (s') account. I/We also accept all of the terms and conditions of the Option Agreement.

I/We acknowledge receiving a copy of the Option Agreement, which contains a predispute arbitration clause highlighted in paragraphs 14 and 15 on page 3. By signing this application, I/we agree to be bound by the terms of the Option Agreement.

Complete > and sign here.	Name of authorized signatory/corporate officer <i>first, middle initial, last</i>	Title
	Signature ✗	Date <i>mm/dd/yyyy</i>
Complete > and sign here.	Name of authorized signatory/corporate officer <i>first, middle initial, last</i>	Title
	Signature ✗	Date <i>mm/dd/yyyy</i>

4. Third-party certification

If the organization has only one person authorized to sign documents on its behalf, a bank officer, practicing attorney, or member of a domestic stock exchange must certify to the following:

I certify that the person identified, and whose signature appears in Section 3, is authorized by the organization identified in Section 1 to make the representations, agreements, and certifications made on this form.

Required if the organization has only one person authorized by the organization to sign documents on its behalf. >

Name <i>first, middle initial, last</i>	Title
Signature X	Date <i>mm/dd/yyyy</i>
Name of bank or firm	

Submitting to Vanguard

Make a copy of the completed form for your records. This form must be signed by an authorized signatory on behalf of your firm.

Submit the completed, signed, and dated form to Vanguard via one of the methods below. If you're an existing web user, you may upload the form directly.

Fax: 484-582-2806

P.O. box address > Vanguard
(all USPS mail) P.O. Box 982903
El Paso, TX 79998-2903

Street address > Vanguard
(all FedEx or UPS mail) 5951 Lockett Court, Suite A3
El Paso, TX 79932

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Return ALL pages of this form, even if some sections are left blank.