



## Analyzing the Validator Set of Ethereum PoS

To become an Ethereum validator, an Ethereum address needs to “stake” (or send to the Beacon smart contract) 32ETH which gets locked up for the duration the user wants to maintain status as a validator. Ethereum addresses can be used to group validators together as the same entity (e.g., LIDO) [1]. Some of these are large staking pools maintained via smart contracts that users can send a fraction of the stake amount to, and in return get a “tokenized” version of their share of the stake [2]. This token can then be traded independently.

Validators who individually stake ETH must go through the protocol to withdraw as a validator and “un-stake” their locked ETH. The actual process of un-staking the locked ETH from the Beacon chain as well as withdrawing of consensus rewards has only been allowed since May of this year. Additionally, there is a queue for both being able to stake ETH and become a validator (currently around 21 days) and for un-staking (currently set to around 5 minutes by the protocol) [3].



The goal of this thesis is to perform a deep study of the validator set of the Ethereum network. Topics of interest include looking at trends in the tokenization of validator stake, as well as trends in the lifetime of validator addresses.

**Candidate Profile:** This project will primarily entail gathering and analyzing of Ethereum data. Some previous experience with/understanding of the Ethereum protocol is a plus. A candidate should have the ability to work independently and an interest in conducting new research. We will have weekly meetings to discuss open questions and determine the next steps.

**Interested? Please contact us for more details!**

### Contact

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1. <https://cointelegraph.com/news/64-of-staked-eth-controlled-by-five-entities-nansen>
2. <https://docs.lido.fi/guides/steth-integration-guide/>
3. <https://www.validatorqueue.com/>