

# ALEXANDER D. WHITE

## EDUCATION

---

|                                                                           |                                                |
|---------------------------------------------------------------------------|------------------------------------------------|
| <b>Stanford University</b><br>PhD in Electrical Engineering               | <i>September 2019 - March 2024</i><br>GPA: 4.2 |
| <b>California Institute of Technology</b><br>BS in Electrical Engineering | <i>September 2015 - June 2019</i><br>GPA: 3.9  |

## AWARDS AND HONORS

---

|                                               |           |
|-----------------------------------------------|-----------|
| Inaugural NTT Research Fellow                 | 2022-2024 |
| Herb and Jane Dwight Stanford Graduate Fellow | 2019-2024 |

## SELECTED PUBLICATIONS

---

[\(full list on google scholar\)](#)

- White, A.D.\*, Wang, Y.\*, Kochalka J.\* et al. (2026) *Intrinsic space-time couplings governing multi-scale cortical dynamics* . In Review
- Kochalka J.\*, Mitra, A\*, White, A.D.\*, Wang, Y.\* et al. (2026) *Causal and directional elements of global brain dynamics* . In Review
- White, A.D., et al. (2025) *Miniature macroscope for causal unbiased screening of brain-wide activity during freely-moving behavior*. In Revision, Nature Methods
- White, A.D., Trivedi, R. (2025) *Rigorous bound on the violation of dynamic reciprocity induced by four-wave mixing*. In Revision, Physical Review Applied
- White, A.D.\*, Ahn, G.H.\* et al. (2024) *Unified laser stabilization and isolation on a silicon chip*. Nature Photonics
- White, A.D.\*, Ahn, G.H.\* et al. (2023) *Integrated passive nonlinear optical isolators*. Nature Photonics
- Gelly, R.J.\*, White, A.D.\*, et al. (2023) *An inverse-designed nanophotonic interface for excitons in atomically thin materials*. Nano Letters
- Ahn, G.H.\*, White, A.D.\*, Kim, H.J.\*, et al. (2023) *Platform-agnostic waveguide integration of high-speed photodectors with evaporated tellurium thin films*. Optica
- White, A.D., et al. (2022) *Gradient-based optimization of optical vortex beam emitters*. ACS Photonics
- White, A.D.\*, Trivedi R.\*, et al. (2022) *Enhancing superradiance in dynamically modulated Tavis-Cummings model with spectral disorder*. ACS Photonics
- Yang, K\*, Shirkurkar, C\*, White, A.D.\*, et al. (2022) *Inverse-designed multi-dimensional silicon photonic transceivers*. Nature Communications
- Lukin D.\*, White, A.D.\*, et al. (2020) *Spectrally reconfigurable quantum emitters enabled by optimized fast modulation*. npj Quantum Information
- White, A.D., Khial P., Hajimiri A. (2020) *A silicon photonics computational lensless active-flat-optics imaging system*. Scientific Reports
- Trivedi, R.T., White, A.D., Vuckovic, J. (2020) *Analytic and geometric properties of scattering from periodically modulated quantum-optical systems*. Physical Review A
- Esparza, M., Mor, A., Niederstrasser, H., White, K., White, A.D., et al. (2020) *Chemical intervention of influenza virus mRNA nuclear export*. PLoS Pathogens

Khial P., White, A.D., Hajimiri A. (2018) *Nanophotonic optical gyroscope with reciprocal sensitivity enhancement*. Nature Photonics

Mor, A., White, A.D., Zhang, K., Thompson, ... Fontoura, B. M. (2016). *Influenza virus mRNA trafficking through host nuclear speckles*. Nature Microbiology

## SELECTED PATENTS

---

*Integrated Laser Stabilization with Built-In Isolation*. First author; US Patent Application, 2022.

*Interlaced Spiral Optical Gyroscope*. First author; US Patent, 2018.

*Non-Reciprocal Transceiver Array Architecture With A Single Non-Reciprocal Element*. Contributing author; US Patent, 2018.

*Lensless 3-Dimensional Imaging Using Directional Sensing Elements* First author; International Patent, 2017.

*Ultra-thin Planar Lens-less Camera*. Contributing author; International Patent, 2017.

## SELECTED CONFERENCE PAPERS AND PRESENTATIONS

---

“miniOEG - a miniaturized macroscope for flexible and robust brain activity interrogation during naturalistic behavior,” A.D. White, et. al, Society for Neuroscience, San Diego, CA, Nov 2025

“Integrated passive nonlinear optical isolators,” A.D. White, et. al, ECOC, Frankfurt Germany, Sep 2024, **Invited Talk**

“Fully Passive On-Chip Nonlinear Continuous Wave Optical Isolators,” A.D. White, G.H. Ahn, K. Van Gasse, J. Vuckovic, CLEO, San Jose, CA, May 2023

“Platform independent integration of telluride thin films for high speed on-chip photodetection,” G.H. Ahn, A.D. White, H.J. Kim, et. al, CLEO, San Jose, CA, May 2023

“Passive Nanophotonic Optical Isolators,” A.D. White, G.H. Ahn, K. V. Gasse, J. Vuckovic, PECS XIII, Tokyo, Japan, March 2023

“Inverse Design of Multi-Layer Foundry-Fabricated Optical Vortex Beam Emitters,” A.D. White, et. al, CLEO, San Jose, May 2022

“Integrated Passive Nonlinear Optical Isolators,” A.D. White, et. al., CLEO, San Jose, May 2022

“Inverse-designed Optical Vortex Beam Emitters,” A.D.White, K.Y.Yang, J.Vuckovic, CLEO (2021)

“Broadband Tuning and Microwave Control of Color Centers in Silicon Carbide,” A.D. White, D.M. Lukin, M.A. Guidry, R. Trivedi, J. Vuckovic, CLEO, San Jose, CA, June 2020

## RESEARCH EXPERIENCE

---

**Deisseroth Lab, Stanford, Palo Alto CA** 2024 - Present  
*Postdoctoral Research Fellow*

- Developing and using new optical and mathematical tools to study brain function.

**Vuckovic Lab, Stanford, Palo Alto CA** 2019 - 2024  
*Herb and Jane Dwight Stanford Graduate Fellow, NTT Research Fellow*

- Engineered optical devices at the nano scale to solve problems in communications, quantum science, and biosensing.

**Soh Lab, Stanford, Palo Alto CA** 2019 - 2024  
*Herb and Jane Dwight Stanford Graduate Fellow, NTT Research Fellow*

- Developed optical biosensors and lead efforts in the group to develop optical readout devices for biomolecular switches.

**Cirac Group, MPQ, Garching, Germany**

Summer 2023

*Visiting Research Scientist*

- Studied the control of disordered many body quantum systems.

**Hajimiri Lab, Caltech, Pasadena CA**

2017 - 2019

*Research Fellow and Rose Hills Foundation SURF*

- Helped develop the first silicon photonics optical gyroscope. Designed several silicon photonics systems including a computational lensless camera.

**Murray Lab, Caltech, Pasadena CA**

2016

*Research Fellow and SURF*

- Functionalized a transcription-translation system for paper-based biosensor arrays and developed new genetic circuits for sensor visualization.

**Fontoura Lab, UT Southwestern Medical Center, Dallas TX**

2013-2015

*Research Fellow*

- Studied the influenza A infection mechanism with the ultimate goal of finding critical interactions that could be targeted by drugs.

## TEACHING POSITIONS

---

Teaching Assistant: **EE 44 Circuits and Systems**, Professor Ali Hajimiri 2018

Teaching Assistant: **EE 223 Applied Quantum Mechanics II**, Professor David Miller 2023

Instructor: **Stanford Ceramics** 2022-2025

## PEER REVIEW

---

Reviewer for Nature Photonics 2025-present

Reviewer for Nature Communications 2025-present

Reviewer for Optics Letters 2023-present

Reviewer for Scientific Reports 2023-present

Regular reviewer for ACS Photonics 2020-present