

# Sarah Brogden Payne

Department of Linguistics and Institute for Advanced Computational Science

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## Education

### Degree-seeking programs

#### Stony Brook University

Ph.D., Linguistics

- Institute for Advanced Computational Science Graduate Research Fellow

Stony Brook, NY

Entered Fall 2022

#### University of Pennsylvania

B.A., Linguistics & Computer and Information Science, *Summa Cum Laude*

- Minor: Cognitive Science
- Honors thesis: "When Collisions are a Good Thing: the Acquisition of Morphological Marking" advised by Dr. Charles Yang

Philadelphia, PA

May 2022

### Non-degree-seeking programs

#### Indiana University Bloomington

Dual Enrollment, Math & Computational Linguistics

- GPA: 4.0/4.0

Bloomington, IN

2017-18

## Awards & Fellowships

2022 **Paula Menyuk Travel Award**, Boston University Conference on Language Development

2022 **Graduate Fellow**, NSF Graduate Research Fellowships Program

2022 **Graduate Fellow**, Institute for Advanced Computational Science Graduate Research Fellowship

2022 **Dean's Scholar**, University of Pennsylvania

2022 **Henry Hoenigswald Thesis Prize in Linguistics**, University of Pennsylvania

2022 **Honorable Mention**, NDSEG Graduate Fellowship

2021 **Elected to Phi Beta Kappa**, University of Pennsylvania

2018-19, 2021-22 **Dean's List**, University of Pennsylvania (*Temporarily discontinued due to COVID-19*)

## Publications

### Articles

**Sarah Payne** and Charles Yang (to appear). *Making Good on BADS*. Italian Journal of Linguistics

### Conference Proceedings<sup>1</sup>

**Sarah Payne** (to appear). *Contrast, Sufficiency, and the Acquisition of Morphological Marking*. Proceedings of the 47th annual Boston University Conference on Language Development.

Caleb Belth, **Sarah Payne**, Deniz Beser, Jordan Kodner, & Charles Yang (2021). *The Greedy and Recursive Search for Morphological Productivity*. Proceedings of the 43rd Annual Meeting of the Cognitive Science Society. 42(1):2869-2875.

Deniz Beser, Joe Cecil, Marjorie Freedman, Jacob Lichtefeld, Mitch Marcus, **Sarah Payne**, & Charles Yang (2021). *A Grounded Approach to Modeling Generic Knowledge Acquisition*. Proceedings of the 43rd Annual Meeting of the Cognitive Science Society. 42(1):2450-2456.

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<sup>1</sup>Proceedings published in the ACL conference and workshop anthologies are refereed and archival. Proceedings of the Cognitive Science Conference are refereed but non-archival.

**Sarah Payne**, Jordan Kodner, & Charles Yang (2021). *Learning Morphological Productivity as Meaning-Form Mappings*. Proceedings of the Annual Meeting of the Society for Computation in Linguistics. 4(1):177-187.

## Manuscripts

**Sarah Payne** (2022). *When Collisions are a Good Thing: the Acquisition of Morphological Marking*. Senior Thesis in Linguistics, University of Pennsylvania.

Ryan Gabbard, Deniz Beser, Jacob Lichtefeld, Joe Cecil, Mitch Marcus, **Sarah Payne**, Charles Yang, & Marjorie Freedman (2021). *ADAM: A Sandbox for Implementing Language Learning*. ArXiv, abs/2105.02263.

## Presentations

**Sarah Payne** (2023). *Root Infinitives and the Acquisition of Morphological Marking*. Talk given at the 47th annual Penn Linguistics Conference.

**Sarah Payne** (2023). *Spheres and Spaghetti: Generalization and Exceptionality in Phonotactic Acquisition*. Talk given at the 23rd Stony Brook, Yale, NYU, and CUNY (SYNC) conference.

**(Invited) Sarah Payne** (2023). *Getting the Right Stuff Wrong: Modeling the Acquisition of Inflectional Morphology*. Computational Linguistics Speaker Series, CUNY.

**Sarah Payne** (2022). *Contrast, Sufficiency, and the Acquisition of Morphological Marking*. Talk given at the 47th annual Boston University Conference on Language Development.

**Sarah Payne**, Caleb Belth, Jordan Kodner, & Charles Yang (2022). *Searching for Morphological Productivity*. Talk given at the 96th Meeting of the Linguistics Society of America.

{Caleb Belth, **Sarah Payne**}, Jordan Kodner, & Charles Yang (2021). *Searching for Morphological Productivity*. Talk given at the 46th annual Boston University Conference on Language Development.

**Sarah Payne**, Caleb Belth, Jordan Kodner, & Charles Yang (2021). *The Recursive Search for Morphological Productivity*. Poster presented at the 5th Annual American International Morphological Meeting.

**Sarah Payne**, Peng Qian, Ethan Wilcox, & Roger Levy (2021). *Particle Filtering with Neural Language Models: Modelling the Effects of Memory on Incremental Sentence Processing*. Poster presented at the MIT Center for Brains, Minds and Machines Summer Research Poster Session.

Ryan Gabbard, Jacob Lichtefeld, Deniz Beser, Joe Cecil, Mitch Marcus, **Sarah Payne**, Charles Yang, & Marjorie Freedman (2021). *Grounding Word Learning Across Situations*. Poster presented at the 43rd Annual Meeting of the Cognitive Science Society.

**Sarah Payne** (2019). *Categorization of Novel Referents by a Seeing Eye Dog*. Talk given at the University of California Berkeley Undergraduate Linguistics Symposium.

**Sarah Payne** & Chris Callison-Burch (2019). *From Word Meaning to Phrase Meaning: Compositionality*. Poster presented at the University of Pennsylvania Center for Undergraduate Research Poster Session.

## Projects

### Center for Brains, Minds, and Machines Summer Research Fellow, MIT

Cambridge, MA

Advisor: Dr. Roger Levy

2021

- Modeled working memory limitations on incremental processing of garden-path sentences with surprisal

### Research Assistant Intern, Information Sciences Institute (ISI)

Waltham, MA

Advisors: Dr. Ryan Gabbard & Dr. Marjorie Freedman

2020

- Helped develop a cognitively-plausible learner that learns from concrete situations and syntactic bootstrapping and implemented this model in Mandarin Chinese

### Visiting Research Assistant

College Park, MD

Advisor: Dr. Dan Swingley, Dr. Thomas Schatz, & Dr. Naomi Feldman

2020

- Used bottleneck features in Kaldi to develop phone embeddings that can be tested against human judgement

**Research Assistant, Infant Language Center***Philadelphia, PA*

Advisor: Dr. Dan Swingley

*2019-20*

- Created phoneme embeddings based on Bottleneck Features that are optimized to mimic the perception of an infant

**Penn Undergraduate Research Mentoring Program (PURM)***Philadelphia, PA*

Advisor: Dr. Chris Callison-Burch

*2019*

- Developed multimodal phrase embeddings by incorporating visual and syntactic for a 20% improvement on test accuracy.

**Research Assistant, Multimodal Embeddings***Philadelphia, PA*

Advisor: Dr. Chris Callison-Burch

*2018-19*

- Created multi-modal word embeddings by imagining mappings from words to images

## Teaching Experience

Fall 2021 **CIS 380: Operating Systems**, Teaching Assistant, *University of Pennsylvania*Spring 2021 **CIS 240: Intro to Computer Architecture**, Teaching Assistant, *University of Pennsylvania*Fall 2020 **NETS 212: Scalable and Cloud Computing**, Teaching Assistant, *University of Pennsylvania*Spring 2019 **CIS 192: Intro to Python**, Teaching Assistant, *University of Pennsylvania*

## Service and Outreach

### Academic Service

**Reviewing****Conferences:***2021-present*

- Cognitive Science Conference
- Conference on Empirical Methods in Natural Language Processing (EMNLP)
- Asia-Pacific Association of Computational Linguistics Conference (AACL)
- European Chapter of the Association of Computational Linguistics (EACL)
- Association of Computational Linguistics (ACL)

**Student Instructor***Stony Brook, NY*

North American Computational Linguistics Open Practice Session

*January 2023***Session Chair***Stony Brook, NY*

Workshop on Model Theoretic Representations in Phonology

*September 2022***Invited Panelist: Navigating the Grad School Application Process***Arizona State University*

ASU Student Organization for Inclusion, Diversity, Education, and Advocacy

*November 2022***Student member**

Justice, Equity, Diversity and Inclusion Committee in Linguistics

*2022-present***Social Media Manager**

Institute for Advanced Computational Science

*2022-present*

### Other Service

**Alumna Interviewer***Suffolk County, NY*

University of Pennsylvania

*2022-present*

- Interview prospective undergraduates for admission to the University of Pennsylvania

**Elected Member, University Council***Philadelphia, PA*

University of Pennsylvania

*2021-22*

- Elected to represent the concerns and voices of the anti-violence community and survivors to university administrators

## **Chair, Abuse and Sexual Assault Prevention (ASAP)**

University of Pennsylvania

*Philadelphia, PA*

*2021-2022*

- Lead board and general meetings and collaborations; co-host Take Back the Night with other universities in Philadelphia

## **Other**

### Memberships

**Linguistic Society of America**, Student Member

### Languages

**Native:** British and American English

**Intermediate:** Spanish, Latin

### Technical Skills

**Proficient:** Python, C, C++, Git, Bash, Linux/Unix

**Intermediate:** Java, R, LaTeX, HTML/CSS

**Beginner:** JavaScript, Haskell, OCaml