Updated April 21, 2025

Jeffrey C. Zemla

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| **Education** |
| 2015 | **PhD in Psychology, Rice University, Houston, TX** |
| 2011 | **MA in Psychology, Rice University, Houston, TX** |
| 2007 | **BA in Psychology/Linguistics, Rutgers University, New Brunswick, NJ** |

**Professional Experience**

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| 2020-present | **Syracuse University, Psychology Department, Syracuse NY***Assistant Professor* |
| 2017-2020 | **University of Wisconsin-Madison, Psychology Department, Madison, WI***Assistant Scientist* |
| 2014-2016 | **Brown University****Department of Cognitive, Linguistic, and Psychological Sciences, Providence, RI***Post-doctoral Research Associate* |
| 2011-2012 | **Virginia Tech Carilion Research Institute, Roanoke, VA***Research Associate* |
| 2008-2009 | **Princeton University, Psychology Department, Princeton, NJ***Research Assistant* |

**Grants and Awards**

* National Institutes of Health – NIA 1 R21 AG053467 (2016–2019)

Computational modeling of semantic decline in Alzheimer’s disease ($406,250 over two years) Role: PI (with Joseph Austerweil)

* MathPsych/ICCM Post-doc Travel Award (2017)
* Runner-up, Hillel Einhorn New Investigator Award, Society of Judgment and Decision Making (2010)

## University Grants and Awards

* Syracuse University SOURCE Fellowship (mentor) (2023)
* Syracuse University SOURCE Undergraduate Student Research Assistant Grant (mentor) (2021)
* Syracuse University Aging Studies Institute Summer Graduate Assistantship Award (2021)
* University of Wisconsin-Madison Computation and Information in Biology and Medicine Postdoctoral Fellow- ship (2019–2020)
* University of Wisconsin-Madison Alzheimer’s Disease and Related Disorders Research Day Best Abstract (2018)
* Rice University Gertrude Maurin Travel Award (2014)
* Rice University Social Science Research Initiative Pre-Dissertation Research Grant (2012)
* Rice University Graduate Student Fellowship (2009–2014)

**Journal Publications**

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| 2025 | Neergaard, K. D., Zemla, J. C., Ortz-Garca de la Foz, V., Lubrini, G., Periaez, J. A., Bernabu, E., . . . Ayesa-Arriola, R. (2025). Novel computational measure of semantic ﬂuency per- formance associated with ﬁrst-episode of psychosis. *Psychiatry Research*, *116462*. |
| 2024 | Zemla, J. C., & Corral, D. (2024). Subjective understanding is reduced by mechanistic framing. *Journal of Cognition*, *7*(1), 1–16. |
|  | Zemla, J. C. (2024). Increased reliance on heuristic thinking in mild cognitive impairment.*Aging, Neuropsychology, and Cognition*. |
| 2023 | Zemla, J. C., Gooding, D. C., & Austerweil, J. L. (2023). Evidence for optimal semantic search throughout adulthood. *Scientiﬁc Reports*, *13*(1), 22528. |
|  | Zemla, J. C., Sloman, S., Bechlivanidis, C., & Lagnado, D. A. (2023). Not so simple! Causal mechanisms increase preference for complex explanations. *Cognition*, *239*, 105551. |
| 2022 | Zemla, J. C. (2022). Knowledge representations derived from semantic ﬂuency data. *Fron- tiers in Psychology*, *13*, 815860. |
| 2021 | Gronchi, G., & Zemla, J. C. (2021). Cognitive style predicts how people explain mental magic tricks. *Acta Psychologica*, *218*(103347). |
| 2020 | Zemla, J. C., Cao, K., Mueller, K. D., & Austerweil, J. L. (2020). SNAFU: The semantic network and ﬂuency utility. *Behavior Research Methods*, *52*, 1681–1699. |
|  | Lange, K. V., Hopman, E. W., Zemla, J. C., & Austerweil, J. L. (2020). Evidence against a relation between bilingualism and creativity. *PLoS One*, *15*(6), e0234928. |
| 2019 | Zemla, J. C., & Austerweil, J. L. (2019). Analyzing knowledge retrieval impairments associ- ated with Alzheimer’s disease using network analyses. *Complexity*, *2019*, 1–12. |
| 2018 | Zemla, J. C., & Austerweil, J. L. (2018). Estimating semantic networks of groups and indi- viduals from ﬂuency data. *Computational Brain & Behavior*, *1*(1), 36–58. |
| 2017 | Zemla, J. C., Sloman, S., Bechlivanidis, C., & Lagnado, D. A. (2017). Evaluating everyday explanations. *Psychonomic Bulletin & Review*, *24*(5), 1488–1500. |
|  | Bechlivanidis, C., Lagnado, D., Zemla, J. C., & Sloman, S. A. (2017). Concreteness and abstraction in everyday explanation. *Psychonomic Bulletin & Review*, *24*(5), 1451–1464. |
| 2015 | Zemla, J. C., Tossell, C. C., Kortum, P., & Byrne, M. D. (2015). A Bayesian approach to pre- dicting website revisitation on mobile phones. *International Journal of Human-Computer Interaction*, *83*, 43–50. |
| 2010 | Alter, A. L., Oppenheimer, D. M., & Zemla, J. C. (2010). Missing the trees for the forest: A construal level account of the illusion of explanatory depth. *Journal of Personality and Social Psychology*, *99*(3), 436–451. |

**Unpublished Manuscripts**

*Manuscripts are available upon request*

Under review

Rofes, A., van Dijk, D., & Zemla, J. C. (under revision). *Subcategory vs category ﬂuency: Items and networks in healthy young adults.*

Zemla, J. C., & Davis, H. (revision under review). *Performance in the Iowa Gambling Task in healthy aging and mild cognitive impairment.*

Russo, N., Osborne, J., Soto, E., Zemla, J. C., & Burack, J. A. (under review). *The develop- mental approach to autism science: IQ matching in the age of neuroimaging research.*

In prep

Johnson, J. E., Zemla, J. C., Shaﬁr, E., Sikorskii, A., Weinstock, L., Cinader, M., . . . Sloman,

S. (submitted). *Effects of scarcity on cognitive ability to manage mental health and substance use after prison release.*

Zemla, J. C., Linehan, N., & Lohnas, L. J. (in prep). *Free recall of semantically related words reveals similarity structure.*

Zemla, J., Castro, N., & Siew, C. (in prep). *Letter ﬂuency norms from A-Z.*

Mueller, K. D., Allison, S. L., Koscik, R. L., Jonaitis, E., Christian, B. T., Betthauser, T. J., . . . Johnson, S. C. (in prep). *Verbal ﬂuency measures are associated with Alzheimer’s disease biomarkers in late-middle-aged cognitively unimpaired adults.*

**Refereed Conference Proceedings**

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| 2025 | Zemla, J., & Castro, N. (2025). Fine-tuning semantic vectors with verbal ﬂuency data. In *Proceedings of the 47th Annual Conference of the Cognitive Science Society* (pp. xx–xx). Austin, TX: Cognitive Science Society. |
|  | Arjune, K., & Zemla, J. C. (2025). Foraging connections: Optimal foraging in letter ﬂuency. In *Proceedings of the 47th Annual Conference of the Cognitive Science Society* (pp. xx–xx). Austin, TX: Cognitive Science Society. |
| 2024 | Gronchi, G., Perini, A., Zemla, J. C., Bagnoli, F., & Pia Viggiano, M. (2024). Explaining apparently impossible phenomena: difference between physical and mental effects. In *Proceedings of the 46th Annual Conference of the Cognitive Science Society* (pp. 3550–3556). Austin, TX: Cognitive Science Society. |
| 2019 | Payton, M., Zemla, J. C., & Austerweil, J. L. (2019). Subjective randomness in a non- cooperative game. In *Proceedings of the 41st Annual Conference of the Cognitive Science Society* (pp. 2544–2549). Austin, TX: Cognitive Science Society. |
| 2017 | Gronchi, G., Zemla, J. C., & Brondi, M. (2017). Cognitive style predicts magical beliefs. In *Proceedings of the 39th Annual Conference of the Cognitive Science Society* (pp. 2138–2143). Austin, TX: Cognitive Science Society. |
|  | Zemla, J. C., & Austerweil, J. L. (2017). Modeling semantic ﬂuency data as search on a semantic network. In *Proceedings of the 39th Annual Conference of the Cognitive Science Society* (pp. 3646–3651). Austin, TX: Cognitive Science Society. |
| 2016 | Zemla, J. C., Kenett, Y. N., Jun, K.-S., & Austerweil, J. L. (2016). U-INVITE: Estimating indi- vidual semantic networks from ﬂuency data. In *Proceedings of the 38th Annual Conference of the Cognitive Science Society* (pp. 1907–1912). Austin, TX: Cognitive Science Society. |
|  | Zemla, J. C., Steiner, S. M., & Sloman, S. (2016). Analytical thinking predicts less teleological reasoning and religious belief. In *Proceedings of the 38th Annual Conference of the Cognitive Science Society* (pp. 1217–1222). Austin, TX: Cognitive Science Society. |

2011

Zemla, J. C., Ustun, V., Byrne, M. D., Kirlik, A., Riddle, K., & Alexander, A. L. (2011). An ACT- R model of commercial jetliner taxiing. In *Proceedings of the 55th Annual Human Factors and Ergonomics Society* (pp. 831–835). Santa Monica, CA: Human Factors and Ergonomics Society.

**Book Chapters**

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| 2019 | Sloman, S., Zemla, J. C., Lagnado, D., Bechlivanidis, C., & Hemmatian, B. (2019). Are humans intuitive philosophers? In S. R. Grimm (Ed.), *Varieties of understanding: New per- spectives from philosophy, psychology, and theology* (pp. 231–250). New York, NY: Oxford University Press. |
| **Invited talks** |  |
| 2024 | Zemla, J. C. (2024, November). *Free recall of semantically related words reveals similarity structure.* Invited talk presented to the Institute for Complex Social Dynamics, Carnegie Mellon University, Pittsburgh, PA. |
|  | Zemla, J. C. (2024, November). *Exploring group differences in semantic representation and re- trieval.* Invited talk presented to the Fred Talk conference series in Psychological Sciences, University of Lisbon, Portugal. |
|  | Zemla, J. C. (2024, November). *Exploring group differences in semantic representation and retrieval.* Invited talk presented to the Neurolinguistics and Language Development group, Center for Language and Cognition, University of Groningen, Amsterdam. |
|  | Zemla, J. C. (2024, November). *Meaning in the mind.* Invited three-part lecture series pre- sented to the European Masters in Clinical Linguistics program, University of Groningen, Amsterdam. |
| 2021 | Zemla, J. C. (2021, January). *A model of semantic network and retrieval im- pairments in Alzheimer’s disease.* Invited talk presented to the Transcon- tinental Computational Psychiatry Workgroup (online). Retrieved from [https://www.quentinhuys.com/tcpw/events/jeffrey-zemla-tbc/](http://www.quentinhuys.com/tcpw/events/jeffrey-zemla-tbc/) |
|  | Zemla, J. C. (2021, February). *A model of semantic network and retrieval impairments in Alzheimer’s disease.* Invited talk presented to the Systems Neuroscience Group (online). |
| 2020 | Zemla, J. C. (2020, February). *Understanding semantic decline in healthy and abnormal aging.* Invited talk presented to the Department of Psychology at Syracuse University, Syracuse, NY. |
|  | Zemla, J. C. (2020, June). *Causal mechanisms increase preference for complex explanations.*Invited talk presented to The Reasoning Lab, U.S. Naval Research Laboratory (online). |
| 2018 | Zemla, J. C. (2018, November). *Comparison of semantic networks in Alzheimer’s patients and controls.* Invited talk presented at the Society for Mathematical Psychology satellite meeting at Psychonomics, New Orleans, LA. |
|  | Zemla, J. C., & Austerweil, J. L. (2018, March). *Modeling semantic ﬂuency data in Alzheimer’s patients.* Invited talk presented at the 2018 Alzheimer’s Disease and Related Disorders Research Day, Madison, WI. Retrieved from [https://www.youtube.com/watch?v=G7IJ538rnF0](http://www.youtube.com/watch?v=G7IJ538rnF0) |

**Public engagement**

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| 2024 | Zemla, J. C. (2024, October). *Different methods of reasoning can intersect with cognitive decline.* Interview on The Informed Patient Podcast, Upstate Medical University, Syracuse, NY. Retrieved from [https://www.youtube.com/watch?v=fn6UhBfHs7U](http://www.youtube.com/watch?v=fn6UhBfHs7U) |
| 2023 | Zemla, J. C. (2023, June). *Modeling the mind.* Invited talk presented to the National Com- puter Science Honor Society Expo, The American School, London, UK. |

**Talk and Poster Presentations**

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| 2024 | Zemla, J. C., & Corral, D. (2024, June). *Subjective understanding is reduced by mechanistic thinking.* Talk presented to the International Conference on Thinking, Milan, Italy. |
| 2023 | Arjune, K., & Zemla, J. C. (2023, November). *Degrees of functionality affect categorization of artifacts.* Poster presented at the 64th Annual Psychonomic Society, San Francisco, CA. |
|  | Linehan, N., & Zemla, J. C. (2023, November). *Free recall of semantically grouped lists leads to greater temporal clustering.* Poster presented at the 64th Annual Psychonomic Society, San Francisco, CA. |
|  | Wilder, R., & Zemla, J. C. (2023, November). *Repeated semantic search in older and younger adults.* Poster presented at the 64th Annual Psychonomic Society, San Francisco, CA. |
| 2022 | Zemla, J. (2022, July). *Individuals with mild cognitive impairment are impaired in a gambling task.* Poster presented at the 44th Annual Conference of the Cognitive Science Society. |
| 2021 | Zemla, J. C., Chambers, B. H., Austerweil, J. L., & Cimpian, A. (2021, July). *Inherence bias in explanation increases with age and cognitive impairment.* Poster presented at the 43rd Annual Conference of the Cognitive Science Society. |
|  | Zemla, J. C., Chambers, B. H., Austerweil, J. L., & Cimpian, A. (2021, November). *Inherence bias in explanation increases with age and cognitive impairment.* Poster presented at the 62nd Annual Psychonomic Society. |
| 2019 | Zemla, J. C. (2019, June). *Alzheimer’s disease biomarkers associated with semantic ﬂuency performance.* Talk presented at the National Library of Medicine Informatics Training Con- ference, Indianapolis, IN. |
|  | Castro, N., & Zemla, J. C. (2019, March). *The stability (and instability) of semantic category networks across adulthood.* Poster presented at the International Convention of Psycholog- ical Science (ICPS), Paris, France. |
| 2018 | Zemla, J. C., & Austerweil, J. L. (2018, November). *Comparison of semantic networks in Alzheimer’s patients and controls.* Poster presented at the 59th Annual Psychonomic Society, New Orleans, LA. |
|  | Zemla, J. C., & Austerweil, J. L. (2018, October). *Modeling semantic ﬂuency data in Alzheimer’s patients.* Poster presented at the 17th CIBM Training Program Annual Retreat, Madison, WI. |
|  | Zemla, J. C., & Austerweil, J. L. (2018, March). *Modeling semantic ﬂuency data in Alzheimer’s patients.* Poster presented at the 2018 Alzheimer’s Disease and Related Disorders Research Day, Madison, WI. |

2017

2016

2015

2014

2012

2011

Zemla, J. C., & Austerweil, J. L. (2018, July). *A model of Alzheimer’s patients perseverating perseverating in semantic ﬂuency data.* Talk presented at the 51st Annual Meeting of the Society for Mathematical Psychology.

Zemla, J. C., & Austerweil, J. L. (2017, April). *SNAFU: A tool for analyzing semantic networks and ﬂuency data.* Poster presented at the 1st Annual Science of Successful Aging Summit, Madison, WI.

Zemla, J. C., & Austerweil, J. L. (2017, June). *Estimating networks from censored random walk data.* Poster presented at the 2017 International Conference on Network Science.

Zemla, J. C., & Austerweil, J. L. (2017, July). *Estimating semantic networks from ﬂuency data.*

Talk presented at the 50th Annual Meeting of the Society for Mathematical Psychology.

Zemla, J. C., & Austerweil, J. L. (2017, November). *Modeling semantic ﬂuency data in Alzheimer’s patients.* Poster presented at the 58th Annual Psychonomic Society, Vancouver, BC, Canada.

Zemla, J. C., & Sloman, S. (2016, August). *The role of mechanistic information in explanatory preference.* Talk presented at the 16th International Conference on Thinking, Providence, RI.

Zemla, J. C., & Sloman, S. (2016, November). *Mechanisms affect preference for simple expla- nations.* Poster presented at the 57th Annual Psychonomic Society, Boston, MA.

Zemla, J. C., Sloman, S. A., Lagnado, D., & Bechlivanidis, C. (2015, June). *Evaluating explanations.* Talk presented at the Varieties of Understanding Midpoint Conference, New York, NY.

Zemla, J. C., Sloman, S. A., Lagnado, D., & Bechlivanidis, C. (2015, November). *Evalu- ating explanations: What makes a good explanation?* Talk presented at the 56th Annual Psychonomic Society, Chicago, IL.

Zemla, J. C., & Wang, S. (2014, June). *Assessing CAPTCHA usability with signal detection theory.* Talk presented at the Southwest Regional Human Factors and Ergonomics Society, College Station, TX.

Zemla, J. C., & Byrne, M. D. (2014, November). *Feedback and block length facilitate adoption of a more optimal speed-accuracy tradeoff policy.* Poster presented at the 33rd Society for Judgement and Decision Making, Long Beach, CA.

Zemla, J. C., Lisinski, J., & LaConte, S. (2012, June). *Performance feedback engages attention, boosts task SNR, and enhances pattern classiﬁcation.* Poster presented at the Organization for Human Brain Mapping, Beijing, China.

Byrne, M. D., Zemla, J. C., Kirlik, A., Riddle, K., & Alexander, A. L. (2011). A human performance model of commercial jetliner taxiing. In *Proceedings of the 16th International Symposium on Aviation Psychology* (pp. 209–214). Dayton, OH.

**Teaching**

# Undergraduate courses

* Cognition and Aging

# Graduate courses

* Proseminar Methods and Topics in Cognitive Psychology
* Experimental Design and Statistical Methods II

**Service**

# Reviewing

* Ad-hoc reviewer (journals): Acta Psychologica, Behavior Research Methods, Cognition, Communications Psy- chology, Complexity, Computational Brain and Behavior, Current Directions in Psychological Science, Current Psychology, Frontiers in Psychology, Journal of Experimental Psychology: General, Journal of Experimen- tal Psychology: Learning, Memory, & Cognition, Journal of Gerontology: Psychological Sciences, Journal of Learning and Instruction, Journal of Neuropsychology, Journal of Personality and Social Psychology, Nature Communications, PeerJ, Proceedings of the National Academy of Sciences, Psychological Science, Psycho- nomic Bulletin & Review, Review of Philosophy and Psychology, Topics in Cognitive Science (topiCS)
* Ad-hoc reviewer (conferences): CogSci, CHI, SJDM
* National Science Foundation, Reviewer (2019)
* External reviewer for the Swiss National Science Foundation

# Advising

* Doctoral students: Kimberly Arjune (2022-current)
* Masters students: Rebecca Wilder (2021-2024)
* Masters committee member: Alec Goldstein, Sepideh Namvarrad, Samantha Maguire, Nathan Burns, Enoch Sarakpo, Jarryd Osborne, Ilaria Siriner
* Doctoral committee member: Ashley Douglass
* Advisor to undergraduate and post-bac research assistants (selected): Samantha Steiner, Kesong Cao, Blake Chambers, Nancy Linehan

# University Committees and Service

* University of Wisconsin-Madison: Committee on Disability, Access, and Inclusion (Postdoctoral Representa- tive; 2019–2020)
* Syracuse University Department of Psychology committees (rotating membership): Diversity, Equity, and In- clusion; Psych News; Research & Faculty Engagement; Undergraduate Engagement Committee
* Syracuse University: Neuroscience Research Day (committee member 2023, co-chair 2024)
* Reviewer for Women in Science and Engineering (WiSE)
* Reviewer for SOURCE student grant proposals

**Technical Skills**

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| Web | JavaScript, HTML, CSS, PHP, SQL |
| Programming | Python, R, MATLAB, Bash, Lisp, C++ |
| Software tools | git, LATEX, NW.js, SPSS, AFNI, HTCondor |

**Open Science**

Software

Data

## SNAFU (Semantic Network and Fluency Utility)

SNAFU is a Python library and stand-alone tool designed to help researchers analyze their verbal ﬂuency data using traditional measures (e.g., cluster switches), and to estimate net- works from their data (Zemla, Cao, Mueller, & Austerweil, 2020).

<http://alab.psych.wisc.edu/snafu> <https://github.com/AusterweilLab/snafu-py>

## Jarjar

Jarjar is a Python library and command-line tool that allows you to programmatically send your team Slack notiﬁcations when your scripts are done running. For example if you have a model that takes hours to run, you can use Jarjar to send yourself updates and catch any errors as they occur.

<https://github.com/AusterweilLab/jarjar>

## OSF.io

I use OSF.io to host both raw data (when permitted) and analysis code for all ﬁrst-author publications.

Proﬁle: [https://osf.io/s2r5w/](https://osf.io/s2r5w)