David Alexander Johnson

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http://da-johnson.github.io

Education

2021 – · · · · **Ph.D. Caltech** Bioengineering.
2019 – 2021 **B.S. Western Washington University** Biochemistry.
2018 – 2019 **A.A. Skagit Valley College** Biology *High Honors*.

Employment History

2012 – 2019 **Hazardous Material Program Supervisor,** United States Navy.

Research Publications

Journal Articles

1. M. Gao, **D. A. Johnson**, I. M. Piper, *et al.*, "Structural and biochemical analyses of selectivity determinants in chimeric Streptococcus Class A sortase enzymes," en, *Protein Science*, vol. 31, no. 3, pp. 701–715, 2022, _eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1002/pro.4266, ISSN: 1469-896X. DOI: 10.1002/pro.4266. (visited on 11/12/2022).
2. **D. A. Johnson**, I. M. Piper, B. A. Vogel, *et al.*, "Structures of Streptococcus pyogenes class A sortase in complex with substrate and product mimics provide key details of target recognition," English, *Journal of Biological Chemistry*, vol. 298, no. 10, Oct. 2022, Publisher: Elsevier, ISSN: 0021-9258, 1083-351X. DOI: 10.1016/j.jbc.2022.102446. (visited on 11/12/2022).
3. J. D. Valgardson, S. A. Struyvenberg, Z. R. Sailer, *et al.*, "Comparative Analysis and Ancestral Sequence Reconstruction of Bacterial Sortase Family Proteins Generates Functional Ancestral Mutants with Different Sequence Specificities," en, *Bacteria*, vol. 1, no. 2, pp. 121–135, Jun. 2022, Number: 2 Publisher: Multidisciplinary Digital Publishing Institute, ISSN: 2674-1334. DOI: 10.3390/bacteria1020011. (visited on 11/12/2022).
4. I. M. Piper, S. A. Struyvenberg, J. D. Valgardson, *et al.*, "A second specificity-determining loop in Class A sortases: Biochemical characterization of natural sequence variation in chimeric SrtA enzymes," en, Mar. 2021, Pages: 2021.03.27.437355 Section: New Results. DOI: 10.1101/2021.03.27.437355. (visited on 11/12/2022).
5. I. M. Piper, S. A. Struyvenberg, J. D. Valgardson, *et al.*, "Sequence variation in the 7–8 loop of bacterial class A sortase enzymes alters substrate selectivity," English, *Journal of Biological Chemistry*, vol. 297, no. 2, Aug. 2021, Publisher: Elsevier, ISSN: 0021-9258, 1083-351X. DOI: 10.1016/j.jbc.2021.100981. (visited on 11/12/2022).

Presentations

1. **D. A. Johnson** and J. E. Svendsen, *A structural characterization of streptococcus class a sortase enzymes*, Bellingham, WA: American Chemistry Society Northwest Regional Meeting (NORM), 2021.
2. **D. A. Johnson**, *Class a sortase enzymes*, Eatonville, WA: University of Washington Annual Conference in Chemical Biology, 2020.

Procedures

3G Assembly	Trained in Golden-Gate Gibson assembly utilizing MoClo library protocols used to engineer genes-of-interest and develop in-house plasmids.
Cell Free Systems	Responsible for purification and processing of *E. coli* extract to generate cell free systems capable of *in vitro* transcription and translation of genetic material.
Encapsulation	Familiar with procedures to encapsulate biological components such as cell free solutions.
Imaging	Experienced in light, scanning-electron, and confocal microscopy techniques for imaging.
Directed Evolution	Familiar with techniques to carry out directed-evolution of target proteins as well as design of experiments to track success.

Skills

Multifaceted Background	A non-traditional career trajectory developed an adaptive research style allowing integration of broad knowledge across scientific-fields and industry.
Genetic Engineering	Microbial genetic engineering skills provide ability to design bespoke cellular assemblies resulting in highly tunable gene circuits.
Project Management	Naval leadership training in broad project oversight and team assignment assists identification of attainable goals and effective approaches to complex tasks.
Coding	Python, R, LaTeX

Additional Information

Awards and Achievements

2023 **Graduate Research Fellowship**, National Science Foundation

2020 **Joseph and Karen Morse Summer Research Fellowship**, Western Washington University.

2017 **Military Outstanding Volunteer Service Medal**, United States Navy.

References

Available on Request