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**Sarah M. (Strycharz) Glaven**  
CBMSE, NRL, Washington, DC 20375  
[sarah.glaven@nrl.navy.mil](mailto:sarah.glaven@nrl.navy.mil), @sglaven  
(c) 202-316-6888 (w) 202-767-3822

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**Education**

- 1996-00 University of Massachusetts, Amherst  
Bachelor of Science, Cum Laude  
Environmental Sciences  
(advisor: Kalidas Shetty)
- 2000-02 University of Massachusetts, Amherst  
Master of Science  
Molecular and Cellular Biology  
(advisor: Kalidas Shetty)
- 2002-06 University of South Carolina, Columbia  
Doctor of Philosophy  
Environmental Health Sciences  
(advisor: Lee A. Newman)
- 2006-09 University of Massachusetts, Amherst  
Postdoc  
Microbiology  
(advisor: Derek Lovley)
- 2009-11 Naval Research Laboratory, Washington, DC  
Postdoc  
Microbial Electrochemistry  
(advisor: Lenny Tender)

**Principal Positions Held:**

Research Biologist, June 2011-present  
Naval Research Laboratory, Center for Bio/Molecular Science and Engineering,  
Washington, DC

**Awards and Honors**

- 2009 National Research Council (NRC) Fellowship  
2011 NRC/ASEE Postdoctoral Research Publication Award  
2011 Karle Fellowship  
2016 ARPAD Publication Award – NRL  
2016 Laboratory University Collaboration Initiative (LUCI) Awardee  
2016 Sigma Xi, NRL Edison Chapter, Young Investigator Award

### **Professional Organizations:**

#### Memberships:

- 2012-present International Society for Microbial Electrochemistry and Technologies (ISMET)
- 2011-present Women's Council on Energy and the Environment (WCEE)
- 2011-present Women in Science and Engineering (WISE)
- 2007-present American Society for Microbiology (ASM)

#### Service to Professional Organizations:

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|--------------|----------------------------------|-----------------------------|
| 2013-2015    | Awards Selection Committee       | ISMET International Meeting |
| 2013         | Abstract Review Committee        | MFC4 Conference             |
| 2015         | Abstract Review Committee        | ISMET International Meeting |
| 2015         | Session Co-chair                 | ASM General Meeting         |
| 2014-2015    | Treasurer                        | ISMET                       |
| 2015-present | Vice President (President elect) | ISMET                       |

#### Service to Professional Publications:

- 2009-present *ad hoc* referee for various journals (EES, ES&T, FEMS, Frontiers, PlosOne, Bioelectrochemistry, etc.)
- 2011-present Editorial Board, International Journal of Applied Research in Natural Products
- 2013-present Review Editor, Frontiers in Energy Research

### **Government and other Professional Service:**

- 2015 *ad hoc* National Science Foundation Grant Reviewer
- 2015 Grant Reviewer, Army Research Office (ARO)
- 2016 Program Reviewer, ARO Institute for Collaborative Biotechnologies (ICB)

### **Public Service:**

- 2014-15 Oxon Hill High School Science and Technology Program
- 2015-16 Presenter, Maury Elementary (DCPS) STEM Expo
- 2015 Mentor, Dept. of Ed. STEM Mentoring Café
- 2015 Presenter, Bruce Monroe Elementary (DCPS) STEM Night

### **Recent Oral Presentations (\*invited)**

- 2014 \*Department Seminar, School of Marine Science & Policy, University of Delaware, Lewes
- 2014 \*North American ISMET Meeting, Penn State, College Station
- 2014 114<sup>th</sup> General Meeting of the ASM, Boston, MA
- 2014 9<sup>th</sup> International Symposium on Subsurface Microbiology, Pacific Grove, CA
- 2015 \*115<sup>th</sup> General Meeting of the ASM, New Orleans, LA; **Session Co-Chair** w/ Pam Silver, Harvard Medical School (HMS)
- 2015 \*Technology Exchange Meeting on Biological Electron Transfer, RTP, NC

- 2015 \*International Meeting of the ISMET, ASU, Tempe, AZ
- 2015 \*Oklahoma U. Biocorrosion Center Meeting, Norman, OK
- 2016 \*Department Seminar, Microbiology and Molecular Genetics, Michigan State University, Ann Arbor, MI
- 2016 \*Department Seminar, Environmental Science and Engineering, Caltech, Pasadena, CA
- 2016 \*Asia Pacific ISMET Meeting, Busan, South Korea
- 2016 \*North American ISMET Meeting, Stanford, Palo Alto, CA
- 2016 \*US Naval Academy, Annapolis, MD
- 2016 \*Technical Exchange Meeting on Microbial Electrosynthesis, Washington, DC

**Mentoring:**

High School

- 2012-2014 Gabrielle Tender, SEAP
- 2014 Shelley Yanosky, SEAP
- 2014-15 Reggie Clemons, Oxon Hill HS S&T Program

Undergraduate

- 2015 Ken Brandon, NREIP
- 2015 Benjamin Miltenberg, NREIP
- 2016 Gabrielle Tender, NREIP
- 2016 Joseph Doyle, NREIP
- 2016 Kirstie Coombs, NREIP
- 2016 USNA, iGEM team

Postdoctoral

- 2013-2016 Brian Eddie, Postdoc Advisor, ASEE
- 2014-present Nicholas Kotloski, Postdoc Advisor, GMU

**Peer Reviewed Publications:**

1. Strycharz, S., and K. Shetty. **2002**. Peroxidase activity and phenolic content in elite clonal lines of *Mentha pulegium* in response to polymeric dye R-478 and *Agrobacterium rhizogenes*. *Process Biochem.* 37(8): 805-812.
2. Strycharz, S., and K. Shetty. **2002**. Effect of *Agrobacterium rhizogenes* on phenolic content of *Mentha pulegium* elite clonal line for phytoremediation applications. *Process Biochem.* 38(2): 287-293.
3. Strycharz, S., and K. Shetty. **2002**. Response of oregano (*Origanum vulgare* L.) clonal lines to *Pseudomonas* sp. Z strain and polydye R-478 and implications for hyperhydricity prevention in tissue culture. *Process Biochem.* 38(3): 343-350.
4. Strycharz, S. M., T.L. Woodard, J.P. Johnson, K.P. Nevin, R.A. Sanford, F.E. Löffler, and D.R. Lovley. **2008**. Graphite electrode as a sole electron donor for reductive dechlorination of tetrachloroethene by *Geobacter lovleyi*. *Appl. Environ. Microbiol.* 74(19): 5943-5947.
5. Strycharz, S., and L. Newman. **2009**. Metabolic response of native Southeastern trees to trichloroethylene: Coniferous trees. *Int. J. Phytoremediation.* 11(2): 171-186.

6. Strycharz, S., and L. Newman. **2009**. Metabolic response of native Southeastern trees to trichloroethylene: Deciduous trees. *Int. J. Phytoremediation*. 11(2): 150-170.
7. Strycharz, S.M., S. M. Gannon, A.R. Boles, K.P. Nevin, A.E. Franks, and D.R. Lovley. **2010**. Reductive dechlorination of 2-chlorophenol by *Anaeromyxobacter dehalogenans* with an electrode serving as the electron donor. *Environ. Microbiol. Reports*, 2(2): 289-294.
8. Strycharz, S.M., R.H. Glaven, S.M. Gannon, M.V. Coppi, L.A. Perpetua, A. Liu, K.P. Nevin, and D.R. Lovley. **2011**. Gene expression and deletion analysis of mechanisms for electron transfer from electrodes to *Geobacter sulfurreducens*. *Bioelectrochemistry*, 80(2): 142-150.
9. Strycharz, S.M., A. Malanoski, R.M. Snider, H. Yi, Lovley, D.R., and L. M. Tender. **2011**. Application of cyclic voltammetry to investigate enhanced catalytic current generation by biofilm-modified anodes of *Geobacter sulfurreducens* strain DL1 vs. variant strain KN400. *Energy Environ. Sci.*, 4(3):896-913.
10. Strycharz-Glaven. S.M., R.M. Snider, A. Guiseppi-Elie, and L.M. Tender. **2011**. On electrical conductivity of microbial nanowires and biofilms. *Energy Environ. Sci.*, 4(11):4366-4379.
11. Strycharz-Glaven, S.M and L.M. Tender. **2012**. Study of the mechanism of catalytic activity of *G. sulfurreducens* biofilm anodes during biofilm growth. *Chemsuschem*, 5(6):1106-18.
12. Bond, D.R., Strycharz-Glaven, S.M., Tender, L.M., and C.I. Torres. **2012**. On electron transport through *Geobacter* biofilms. *Chemsuschem*, 5(6):1099-105.
13. Strycharz-Glaven, S.M. and L.M. Tender. **2012**. Reply to the 'Comment on "On electrical conductivity of microbial nanowires and biofilms"' by N. S. Malvankar, M. T. Tuominen and D. R. Lovley, *Energy Environ. Sci.*, 2012, 5, DOI: 10.1039/c2ee02613a. *Energy Environ. Sci.*, 5(3):6250-6255.
14. Snider, R.M., Strycharz-Glaven, S.M., Tsoi, S.D., Erickson, J.S., and L.M. Tender. **2012**. Long range electron transport in *Geobacter sulfurreducens* biofilms is redox gradient-driven. *PNAS*. 109(38):15467-15472.
15. Dar, S., Tan, H. Peacock, A., Jaffe, P., N'Guessan, L., Williams, K. H. and S.M. Strycharz-Glaven. **2013**. Spatial distribution of *Geobacteraceae* and sulfate reducing bacteria during in situ bioremediation of uranium contaminated groundwater. *Remediation*. 23(2): 31-49.
16. Strycharz-Glaven, S.M., Glaven, R.H., Wang, Z., Zhou, J., Vora, G.J. and L.M. Tender. **2013**. Electrochemical investigation of a microbial solar cell reveals a non-photosynthetic biocathode catalyst. *App. Environ. Microbiol.*, 79(13): 3933-3942.
17. Lebedev, N., Strycharz-Glaven, S.M., and L.M. Tender. **2014**. Spatially resolved confocal resonant Raman microscopic analysis of anode-grown *Geobacter sulfurreducens* biofilms. *Chemphyschem*. DOI:10.1002/cphc.201300984.
18. Lebedev, N., Strycharz-Glaven, S.M., and L.M. Tender. **2014**. High resolution AFM and single cell resonance Raman spectroscopy of *Geobacter sulfurreducens* biofilms early in growth. *Front. Energy Res*. DOI:10.3389/fenrg.2014.00034.

19. Strycharz-Glaven, S.M., Boyd, D.A., Roy, J.N., Snider, R.M., and L.M. Tender. **2014**. Electron transport through early exponential phase anode-grown *Geobacter sulfurreducens* biofilms. *Chemelectrochem*. DOI: 10.1002/celc.201402168.
20. Gregoire, K.P., Glaven, S.M., Hervey, W.J. IV, Lin, B. and L.M. Tender. **2014**. Enrichment of a High-Current Density Denitrifying Microbial Biocathode. *J. Electrochem. Soc.* 161(13):H3049-H3057.
21. Wang, Z., Leary, D.H., Malanoski, A., Li, R., Hervey, W.J. IV, Eddie, B.L., Tender, G.S., Yanosky, S.G., Vora, G.J., Tender, L.M., Lin, B., and S.M. Strycharz-Glaven. **2015**. A previously uncharacterized, non-photosynthetic member of the *Chromatiaceae* is the primary CO<sub>2</sub> fixing constituent in a self-regenerating biocathode. *App. Environ. Microbiol.* 81(2): 699-712.
22. Leary, D.H., Hervey, W.J. IV, Wang, Z., Malanoski, A., Eddie, B.L., Tender, G.S., Vora, G.J., Tender, L.M., Lin, B., and S.M. Strycharz-Glaven. **2015**. Changes to protein expression in a marine biocathode biofilm by changing electrode potential. *PROTEOMICS*. 15(20): 3486-3496.
23. Wang, Z., Eddie, B.L., Malanoski, A., Li, R., Hervey, W.J. IV, Lin, B., and S.M. Strycharz-Glaven. **2015**. Complete Genome Sequence of *Marinobacter* sp. CP1 Isolated from a Self-Regenerating Biocathode Biofilm. *Genome Announc.* 3(5): e01103-15.
24. Yates, M.D., Golden, J.P., Roy, J., Strycharz-Glaven, S.M., Tsoi, S., Erickson, J.S., El-Naggar, M., Calabrese Barton, S., and L.M. Tender. **2015**. Thermally Activated Long Range Electron Transport in Living Biofilms. *PCCP*. 17:32564-32570.
25. Eddie, B.J., Wang, Z., Malanoski, A.P., Hervey, W.J. IV, Lin, B., and S.M. Strycharz-Glaven. **2016**. Description of “*Candidatus Tenderia electrophaga*” gen. nov, sp. nov., an Uncultivated Electroautotroph from a Biocathode Enrichment. *Int. J. Syst. Evol. Microbiol.* 66(6): 2178.
26. Wang, Z., Eddie, B.L., Malanoski, A., Li, R., Hervey, W.J. IV, Lin, B., and S.M. Strycharz-Glaven. **2016**. Complete Genome Sequence of *Labrenzia* sp. CP4 Isolated from a Self-Regenerating Biocathode Biofilm. *Genome Announc.* May/June 4(3): e00354-16.
27. Cusick, K., Lin, B., Malanoski, A., Strycharz-Glaven, S., Cockrell, A., Fitzgerald, L., Barlow, D., Cramer, J. and J. Biffinger. **2016**. Molecular Mechanisms Contributing to the Growth and Physiology of an Extremophile Cultured with Dielectric Heating. *App. Environ. Microbiol.* 82(20): 6233-6246.
28. Yates, M., Eddie, B.J., Kotloski, N., Malanoski, A.M., Lin, B., Lebedev, N., Strycharz-Glaven, S.M., Tender, L.M. **2016**. Toward understanding long-distance extracellular electron transport in an electroautotrophic microbial community. *Energy Environ. Sci.* 9(11): 3544-3558.
29. Yates, M.D., Strycharz-Glaven, S.M., Golden, J.P., Roy, J., Tsoi, S., Erickson, J.S., El-Naggar, M., Calabrese Barton, S., and L.M. Tender. **2016**. Measuring conductivity of living *Geobacter sulfurreducens* biofilms. *Nat. Nanotech.* 11(11): 910-913.
30. Eddie, B.J., Wang, Z., Leary, D.H. Malanoski, A.P., Hervey, W.J. IV, Tender, L.M., Lin, B., and S.M. Strycharz-Glaven. **2016**. Metatranscriptomics supports

mechanism for biocathode electroautotrophy by “*Candidatus Tenderia Electrophaga*”. *bioRxiv*, 074997.

31. Malanoski, A.P., Eddie, B.J., Wang, Z., Lin, B., and S.M. Strycharz-Glaven. **2016**. Abundance and diversity estimation in a biocathode biofilm containing previously uncharacterized organisms. *In preparation*.

#### **Non-Peer Reviewed Publications:**

1. Strycharz-Glaven, S.M., Lin, B., Leary, D.H., Hervey, W.J. IV, Wang, Z., Malanoski, A., Eddie, B.J., and Tender, L.M. **2016**. Bacteria as Electrochemical Catalysts. *NRL Review*.

#### **Book Chapters:**

1. Boyd, D.A, Erickson, J., Roy, J.N., Snider, R.M., Strycharz-Glaven, S.M., Tender, L.M. Measuring Electron Transport Rates through Electrochemically Active Biofilms. In: Electrochemically-Active Biofilms in Bioelectrochemical Systems: From Laboratory Practice to Data Interpretation, **2013**, John Wiley & Sons, Inc. Edited by Haluk Beyenal.

#### **Patents:**

1. U.S. Patent No: 8,277,657 (issued October 2, 2012) (Derek R. Lovley, applicant; Sarah Strycharz, applicant; Frank Loeffler, applicant), “Systems and methods for microbial reductive dechlorination of environmental contaminants”.

#### **Research Awards and Grants:**

##### Current Research Support

PI: Glaven 09/01/2014 – 09/30/2017

NRL Base 6.1

Characterization of Marine Microbial Biofilms for Bioenergy Production

PI: Glaven 02/01/2016 – 12/31/16

Office of Naval Research

Metabolic Imaging of the Biocathode

PI: Glaven 08/01/2016 – 12/31/16

Office of Naval Research

Towards microbial electrosynthesis of oleochemicals by *Marinobacter* sp. strain CP1 in an autotrophic cathode biofilm

PI: Glaven 04/01/2016 – 12/31/19

Office of the Assistant Secretary of Defense (Research and Engineering)

Living microcontrollers for AUVs

PI: Glaven 10/01/2016 – 9/30/2021

DTRA

Recruiting the human respiratory microbiome to counter aerosolized peptide/protein toxins/Glaven

Completed Research Support

PI: Glaven

02/15/2013 – 02/15/15

Office of Naval Research

Electron Transfer in Environmentally Robust Marine Microorganisms for the Biotic/Abiotic Interface