

## DAVID FIKE

### PROFESSIONAL PREPARATION

#### *i) Education:*

2001	B.S., Engineering Physics	University of Illinois at Urbana-Champaign
2001	B.S., Astronomy	University of Illinois at Urbana-Champaign
2001	B.S., Geology	University of Illinois at Urbana-Champaign
2002	M. Phil., Polar Studies	Churchill College, Cambridge University, UK
2007	Ph.D., Geochemistry	Massachusetts Institute of Technology

#### *ii) Postdoctoral experience:*

California Institute of Technology, 2007 – 2008

### APPOINTMENTS AND AWARDS

2009 – present	Assistant Professor, Washington University in St. Louis
2009	Kavli Fellow
2007 – 2008	O.K. Earl Postdoctoral Fellow, California Institute of Technology
2005	MIT Global Habitability and Longevity Award
2003 – 2006	NSF Graduate Research Fellowship
2002 – 2003	MIT Kerr Fellowship
2002	NASA Planetary Biology Internship
2001 – 2002	Churchill Scholarship
2000 – 2001	Barry Goldwater Scholarship

### PUBLICATIONS

**Fike, D. A.** & Grotzinger, J. P. 2009. “A  $\delta^{34}\text{S}_{\text{SO}_4}$  approach to reconstructing biogenic pyrite burial in carbonate-evaporite basins: an example from the Ara Group, Sultanate of Oman”, *Geology*, **in press**.

**Fike, D. A.**, Finke, N., Zha, J., Blake, G., Hoehler, T. M., & Orphan, V. J. 2009. "The effect of photosynthetic forcing and sulfate concentration on millimeter-scale sulfide  $\delta^{34}\text{S}$  in hypersaline cyanobacterial mats, Guerrero Negro, Baja California Sur, Mexico", *Geochimica et Cosmochimica Acta*, **73**: 6187 - 6204.

Ries, J. B., **Fike, D. A.**, Pratt, L. M., Lyons, T. W., & Grotzinger, J. P., 2009. Super-heavy pyrite ( $\delta^{34}\text{S}_{\text{pyr}} > \delta^{34}\text{S}_{\text{CAS}}$ ) in the terminal Proterozoic Nama Group, Southern Namibia: A consequence of low seawater sulfate at the dawn of animal life. *Geology*, **37** (8): 743 – 746.

Love, G. D., Grosjean, E., Stalvies, C., **Fike, D. A.**, Bradley, A. S., Kelly, A. E., Bhatia, M., Meredith, W., Snape, C. E., Bowring, S. A., Condon, D. J., Grotzinger, J. P., & Summons, R. E. 2009. Fossil steroids record the appearance of Demosponges during the Cryogenian Period. *Nature*, **475**: 718 - 721.

Grosjean, E., Love, G. D., Stalvies, C., **Fike, D. A.**, Newall, M., Taylor, P. N., & Summons, R. E. 2009. “Origin of petroleum in the Neoproterozoic-Cambrian South Oman Salt Basin”, *Organic Geochemistry*, **40** (1): 87 - 110.

Moynier, F., Pichat, S., Pons, M.-L., **Fike, D.A.**, Balter, V., & Albarede, F. 2009. "Isotopic fractionation and transport mechanisms of Zn in plants" *Chemical Geology*, **267**: 125 – 130.

**Fike, D. A.**, Gammon, C. L., Ziebiz, W., & Orphan, V. J. 2008. "Micron-scale mapping of sulfur cycling across the oxycline of a cyanobacterial mat: a combined nanoSIMS and CARD-FISH approach", *ISME Journal*, **2**: 749 – 759.

**Fike, D. A.** & Grotzinger, J. P. 2008. "A paired sulfate–pyrite  $\delta^{34}\text{S}$  approach to understanding the evolution of the Ediacaran–Cambrian sulfur cycle", *Geochimica et Cosmochimica Acta*, **72**(11): 2636 – 2648.

Maloof, A.C., Kopp, R.E., Grotzinger, J.P., **Fike, D.A.**, Bosak, T., Vali, H., Poussart, P.M., Weiss, B.P., & Kirschvink, J.L. 2007. "Sedimentary iron cycling and the origin and preservation of magnetization in platform carbonate muds, Andros Island, Bahamas", *Earth and Planetary Science Letters*, **259**(3-4): 581 - 598.

**Fike, D. A.**, Grotzinger, J. P., Pratt, L. M., & Summons, R. E. 2006. "Oxidation of the Ediacaran Ocean", *Nature*, **444**: 744 - 747.

Jerolmack D. J., Mohrig, D., Grotzinger, J. P., **Fike, D. A.**, Watters, W. A. 2006. "Spatial grain size sorting in eolian ripples and estimation of wind conditions on planetary surfaces: Application to Meridiani Planum, Mars", *Journal of Geophysical Research*, **111**: E03S90.

McLennan, S. M., Bell, J. F., Calvin, W. M., Christensen, P. R., Clark, B. C., de Souza, P. A., Farmer, J., Farrand, W. H., **Fike, D. A.**, Gellert, R., Ghosh, A., Glotch, T. D., Grotzinger, J. P., Hahn, B., Herkenhoff, K. E., Hurowitz, J. A., Johnson, J. R., Johnson, S. S., Jolliff, B., Klingelhofer, G., Knoll, A. H., Learner, Z., Malin, M. C., McSween, H. Y., Pockock, J., Ruff, S. W., Soderblom, L. A., Squyres, S. W., Tosca, N. J., Watters, W. A., Wyatt, M. B., Yen, A. 2005. "Provenance and diagenesis of the evaporite-bearing Burns formation, Meridiani Planum, Mars", *Earth and Planetary Science Letters*, **240**(1): 95-121

Sullivan, R., Banfield, D., Bell, J. F., Calvin, W., **Fike, D. A.**, Golombek, M., Greeley, R., Grotzinger, J., Herkenhoff, K., Jerolmack, D., Malin, M., Ming, D., Soderblom, L. A., Squyres, S. W., Thompson, S., Watters, W. A., Weitz, C. M., Yen, A. 2005. "Aeolian processes at the Mars Exploration Rover Meridiani Planum landing site" *Nature*, **436**(7047): 58-61

Grotzinger, J. P., Arvidson, R. E., Bell, J. F., Calvin, W., Clark, B. C., **Fike, D. A.**, Golombek, M., Greeley, R., Haldemann, A., Herkenhoff, K. E., Jolliff, B. L., Knoll, A. H., Malin, M., McLennan, S. M., Parker, T., Soderblom, L., Sohl-Dickstein, J. N., Squyres, S. W., Tosca, N. J., Watters, W. A. 2005. "Stratigraphy and sedimentology of a dry to wet eolian depositional system, Burns formation, Meridiani Planum, Mars", *Earth and Planetary Science Letters*, **240**(1): 11-72.

Soderblom, L. A., Anderson, R. C., Arvidson, R. E., Bell, J. F., Cabrol, N. A., Calvin, W., Christensen, P. R., Clark, B. C., Economou, T., Ehlmann, B. L., Farrand, W. H., **Fike, D. A.**, Gellert, R., Glotch, T. D., Golombek, M. P., Greeley, R., Grotzinger, J. P., Herkenhoff, K. E., Jerolmack, D. J., Johnson, J. R., Jolliff, B., Klingelhofer, G., Knoll, A. H., Learner, Z. A., Li, R.,

Malin, M. C., McLennan, S. M., McSween, H. Y., Ming, D. W., Morris, R. V., Rice, J. W., Richter, L., Rieder, R., Rodionov, D., Schroder, C., Seelos, F. P., Soderblom, J. M., Squyres, S. W., Sullivan, R., Watters, W. A., Weitz, C. M., Wyatt, M. B., Yen, A., Zipfel, J. 2004 “Soils of eagle crater and Meridiani Planum at the Opportunity Rover landing site”, *Science*, 306 (5702): 1723 – 1726.

**Fike, D. A.**, Cockell, C., Lee, P., & Pearce, D. 2003. “Heterotrophic Microbial Colonization of Impact-Shocked Rocks from the Haughton Impact Structure, Devon Island, Nunavut, Canadian High Arctic”, *International Journal of Astrobiology*, 1(4): 311-323.

Cabrol, N., Grin, E., Carr, M., Sutter, B., Moore, J., Farmer, J. D., Greeley, R., Kuzmin, R. O., Des Marais, D. J., Kramer, M. G., Newsom, H., Barber, C., Thorsos, I., Tanaka, K. L., Barlow, N. G., **Fike, D. A.**, Urquhart, M. L., Grigsby, B., Grant, F. D. & de Goursac, O. 2003. “Exploring Gusev Crater with Spirit: Review of science objectives and testable hypotheses”, *Journal Geophysical Research*, 108 (E12): 8076 – 8097.

### **SYNERGISTIC ACTIVITIES**

Chair (2009) and Organizing Committee (2010), Frontiers of Science Conference (jointly run by US National Academy of Sciences and Chinese Academy of Sciences)  
Organizing Committee, 2009 V. M. Goldschmidt Conference  
Speaker and participant, 2008 NSF Meeting of Young Researchers in Earth Science (MYRES).  
Participant, 2008 NSF/SERC Early Career Workshop for Assistant Professors  
Instructor, USC Geobiology 2008 Summer course, Catalina Island, California  
Reviewer: *Nature*, *Nature Geoscience*, *Geology*, *EPSL*, *GCA*, *Geobiology*, *Precambrian Geology and NSF Sedimentary Geology and Geobiology* (2009), *ACS Petroleum Research Fund*  
Member: American Geophysical Union, Geological Society of America, Geochemical Society, American Association of Petroleum Geologists, International Association of Sedimentologists

### **COLLABORATORS**

F. Albarede (ENS-Lyon), J. Amend (Washington University), A. Anbar (ASU), V. Balter (ENS-Lyon), M. Bhatia (MIT), S. Bowring (MIT), A. Bradley (Harvard), D. Condon (NERC), R. Criss (Washington University), G. Druschel (University of Vermont), J. Eiler (Caltech), N. Finke (NASA/Ames), W. Fischer (Caltech), C. Gammon (NYU), D. Giammar (Washington University), E. Grosjean (Geoscience Australia), J. Grotzinger (Caltech), Y. Guan (Caltech), T. Hoehler (NASA-AMES), A. Kelly (MIT), G. Love (UC-Riverside), W. Meredith (Nottingham), F. Moynier (Washington University), P. Myrow (Colorado College), V. Orphan (Caltech), S. Pichat (ENS-Lyon), M.-L. Pons (ENS-Lyon), T. Rasbury (SUNY-Stony Brook), R. Ripperdan (St. Louis University), C. Snape (Nottingham), Stephen Ruppel (Texas Bureau of Economic Geology), L. B. Smith (New York State Museum), F. Stadermann (Washington University), C. Stalvies (Newcastle), W. Ziebiz (USC).

**GRADUATE ADVISORS:** John Grotzinger (MIT), Roger Summons (MIT)

**POSTDOCTORAL SPONSORS:** Victoria Orphan (Caltech); John Eiler (Caltech)

**THESIS ADVISOR of:** J. Garrecht Metzger (Washington University)

Total graduate students advised: 1 (ongoing).

**POSTDOCTORAL ADVISOR of:** David Jones (Washington University)

Total postdocs advised: 1 (ongoing).