

# Figen A. Mekik

Associate Professor  
Department of Geology  
Grand Valley State University  
Allendale, MI 49401  
Birth Date : Nov. 22, 1968

Phone (616) 331 3020  
Fax (616) 331-3740  
mekikf@gvsu.edu  
<http://www4.gvsu.edu/mekikf>

Citizenship : Turkish and U.S. Permanent Resident

## *Education*

- 1999 Northern Illinois University, Geology, Ph. D.  
1994 Middle East Technical University, Geological Engineering, M.S.  
1991 Middle East Technical University, Geological Engineering, B.S.

## *Professional Experience*

<i>Grand Valley State University</i>	Department of Geology
2005 - present	Associate Professor (tenured)
2000- 2005	Assistant Professor
1999-2000	Visiting Assistant Professor
<i>University of British Columbia</i>	Department of Earth and Ocean Sciences
July, 2008	Visiting Scientist
May - June, 2007	Visiting Scientist
Apr. - June, 2006	Visiting Scientist
Sep. – Dec. 2005	Visiting Scientist (Sabbatical Leave)
<i>Woods Hole Oceanogr. Institution</i>	Department of Marine Chemistry
Summer 2004	Visiting Scientist
Summer 2001	Visiting Scientist
<i>Northern Illinois University</i>	Department of Geology and Environmental Geosciences
1997 - 1999	Instructor
1996 - 1997	Head Teaching Assistant
1994 - 1996	Teaching Assistant
<i>Middle East Technical University</i>	Department of Geological Engineering:
1991-1994	Teaching Assistant for Micropaleontology and Field Geology

## *Awards*

***Go Fly a Kite Award*** for scholars whose research is daring in its approach and cutting-edge in nature with long-lasting benefits. March 26, **2009** presented by the Office of Grants Development and Administration, Grand Valley State University.

***Teaching Honor: Last Lecture Series Nomination***, November 29, **2007**: Student-nominated honor for teaching where the nominated professor gives a 40-minute lecture to the student body as if this were the last lecture in the professor's teaching career. Grand Valley State University.

***Michigan Science Olympiad Regional Tournament Award for Leadership and Continuing Service***, **2006**. Grand Valley State University.

## *Courses Taught at GVSU*

Exploring the Earth (introductory geology)  
Oceans (freshmen ocean science)  
Earth History  
Environmental Geology

Living with the Great Lakes  
Plate Tectonics  
Invertebrate Paleontology  
Oceanography (senior level)

## *Peer-Reviewed Publications*

\* denotes undergraduate co-author

- Mekik**, A. F., M. Kienast, S. Kienast, R. François, P. Loubere and A. Mix (In prep) Deglacial sea surface and deep chlorophyll maximum temperature variations in the eastern equatorial Pacific: implications for regional paleoceanography.
- Mekik**, A. F. and N. Noll.\* (In prep) A multi-proxy approach to tracing dissolution in the subtropical South Atlantic: foraminifer fragmentation, shell weight and Mg/Ca.
- Mekik**, A. F., A. Ridgwell, R. François, P. Loubere, and M. Richaud, (Under revision). Is carbonate compensation from the last deglaciation responsible for the late Holocene increase in atmospheric  $p\text{CO}_2$ ?
- Mekik**, A. F. and L. Raterink\*, 2008. Effects of surface ocean conditions on the quantification of deep sea calcite dissolution in the tropical Pacific, *Paleoceanography*, 23, PA1216, doi:10.1029/2007PA001433. (15 pages)
- Mekik**, A. F., R. François, and M. Soon, 2007. A novel approach to dissolution correction of Mg/Ca paleo-thermometry in the tropical Pacific, *Paleoceanography*, 22, PA3217, doi:10.1029/2007PA001504. (12 pages)
- Mekik**, A. F., P. Loubere and M. Richaud, 2007. Rain Ratio Variation in the Tropical Ocean: Tests with Surface Sediments in the Eastern Equatorial Pacific. *Deep Sea Research II*, doi:10.1016/j.dsr2.2007.01.010. (16 pages)
- Mekik** A. F., and R. François, 2006. Tracing deep sea carbonate dissolution: Agreement between the *G. menardii* fragmentation index and elemental ratios (Mg/Ca and Mg/Sr) in planktonic foraminifers. *Paleoceanography*, 21, PA4219, doi:10.1029/2006PA001296. (12 pages)
- Loubere, P., A. F. **Mekik**, R. François, and S. Pichat, 2004. Export fluxes of calcite in the eastern equatorial Pacific from the Last Glacial Maximum to present, *Paleoceanography*, 19, doi.10.1029/2003PA000986. (16 pages)
- Loubere, P., Z. Liu, M. Richaud, and F. **Mekik**, 2003. Oceanic conditions in the eastern equatorial Pacific during the onset of ENSO in the Holocene, *Quaternary Research*, 60, 142-148.
- Mekik**, A. F., P. Loubere, and D. Archer, 2002. Organic carbon flux and organic carbon to calcite flux ratio recorded in deep sea carbonates: demonstration and a new proxy, *Global Biogeochemical Cycles*. vol. 16, doi.10/1029/2001GB001634. (15 pages)
- Carter, E., P. Whalen and F. **Mekik**, 2002. (editors) Micropaleontology of Radiolarians, Proceedings of INTERRAD IX, *Micropaleontology*, vol. 48, Supplement Number 1.

- Mekik, A. F.**, 2000. Early Cretaceous Pantanelliidae (Radiolaria) from Northwest Turkey, *Micropaleontology*, Vol. 46, no.1: 1-30.
- Mekik, A. F. and Loubere, P.**, 1999. Hypothetical experiments with quantitative paleo-estimation: extrapolation and the no-analog problem. *Marine Micropaleontology*, vol. 36/4: 225-248.
- Mekik, A. F., Ling, H.Y., Özkan-Altiner, S. and Altiner, D.**, 1999. Preliminary radiolarian biostratigraphy across the Jurassic-Cretaceous Boundary from northwestern Turkey. In De Wever P. & Caulet J.-P. (eds), InterRadIII, Paris/Bierville 8,13 September 1997, *Geodiversitas*, 21 (4): 715-738.

### *Invited Talks*

**Chemistry Summer Journal Club**, Grand Valley State University, June 16, 2009.

**Northwestern University**, Department of Earth and Planetary Sciences. Evanston, Illinois. *Colloquium Presentation. Deglacial Deep Sea Ventilation: A View from the Ocean Bottom*, May 8, 2009.

**Water Resources Institute, Grand Valley State University**, Muskegon, Michigan. *Colloquium Presentation. Isn't Photosynthesis Enough to Curb Global Warming? Sources, Sinks and Fluxes of CO<sub>2</sub> Through Geologic Time*. April 30, 2009.

**Center for Inquiry**, Grand Rapids, Michigan. *Global Warming is Your Fault*, January 14, 2009.

**Lamont Doherty Earth Observatory of Columbia University**, Palisades, New York, *Colloquium Presentation. Deglacial Deep Sea Ventilation Hypothesis: Where is the Carbonate Preservation Maximum?* October 27, 2008.

**Science Café**, Grand Rapids, MI: *Sea Level Rise: An Unstoppable Consequence of Global Warming*, September 16, 2008.

**Dalhousie University**, Department of Oceanography, *Colloquium Presentation: The Great Ocean Carbonate Buffer: Mysteries from the Deeps*. March 18, 2008.

**Rutgers University**, Department of Earth and Planetary Sciences: *Mg/Ca in surface and thermocline-dwelling planktonic foraminifers: Relative contributions from calcification temperature and post-depositional calcite dissolution*. April 11, 2007.

**AGU Chapman Conference** on the Role of Marine Organic Carbon and Calcite Fluxes in Driving Global Climate Change, Past and Future, Woods Hole, MA: *Reconstructing the Rain Ratio in the Eastern Equatorial Pacific*.. July 24, 2005.

**5<sup>th</sup> Annual Conference on Turkish Stratigraphy and Paleontology**, Urgup, Turkey: *Anthropogenic CO<sub>2</sub> Emissions and the Global Carbon Cycle*. Sep. 19-27, 2004.

## ***Funding***

*\* denotes undergraduate co-author*

**Mekik, F.** and S. Clark\* 2009 Estimating Sea Surface Temperatures for the Earth's Past. \$6,000. Student Summer Scholars Program, GVSU. *Awarded*

**Mekik, F.**, 2008. COLLABORATIVE RESEARCH: A Multi-Proxy Search for the Deglacial Deep Sea Carbonate Preservation Maximum. \$84,029. Collaborative with Bob Anderson at Lamont Doherty Earth Observatory. National Science Foundation. OC0825280 *Awarded*.

**Mekik, F.**, 2008. Deglacial Water Column Structure and Dynamics in the Eastern Equatorial Pacific Ocean. \$3,000 Grand Valley State University, Research and Development Center, Research Grant-in-Aid Fall. *Awarded*.

**Mekik, F.**, 2003. RUI: Quantifying Calcite Flux and the Organic Carbon to Calcite Flux Ratio in the Tropical and Subtropical World Ocean. \$92,174 National Science Foundation OCE0326686. *Awarded*.

**Mekik, F.**, 2003. Quantifying rain rate for different kinds of calcite in deep-sea sediments. \$2,027 Grand Valley State University, Research and Development Center, Research Grant-in-Aid Fall. *Awarded*.

**Mekik, F.**, 2001. Oceanic regulation of atmospheric CO<sub>2</sub> in the eastern equatorial Pacific over the last 150,000 years. \$8,000 Michigan Space Grant Consortium of NASA and Grand Valley State University (matching grant). *Awarded*.

**Mekik, F.**, 2001. Determining the timing of closure of the northern branch of the Tethys Ocean. \$5,000. Grand Valley State University, Research and Development Center, Research Stipend. *Awarded*.

**Mekik, F.**, 2001. Determining the timing of closure of the northern branch of the Tethys Ocean. \$2,525. Grand Valley State University, Research and Development Center, Research Grant-in-Aid. *Awarded*.

## ***Conference Abstracts:***

*\* denotes undergraduate co-author*

Clark, S.\*, **F. Mekik**, M. Kienast and J. Groeneveld, 2009. Tropical Pacific Mg/Ca paleothermometry: A Contribution to the Core-top Calibration, AGU Fall Meeting, San Francisco CA.

Vander Boon, C.\*, and **F. Mekik**, 2009. Quantifying Calcite Dissolution in Shallow Pelagic Seas: A New Aragonite Dissolution Proxy, AGU Fall Meeting, San Francisco CA.

Wicker, M. A.\*, **F. Mekik**, and R. Anderson, 2009. Mixed Messages from Multiple Proxies: Is There a Deglacial Carbonate Preservation Peak? AGU Fall Meeting, San Francisco CA.

- Mekik, F.**, and R. Anderson, 2009. Ventilation of the Deeps During the Deglaciation: Records from Tropical and Subtropical Cores. AGU Fall Meeting, San Francisco CA.
- Mekik, F.** and M. Kienast. 2008. Comparing changes in sea surface and thermocline temperatures between the western and eastern equatorial Pacific since the Last Glacial Maximum. AGU Fall Meeting, San Francisco CA.
- Ridgwell, AR., **Mekik F.**, and D. Schmidt. 2008. Models are not just for Christmas. AGU Fall Meeting, San Francisco, CA.
- Mekik, F. A.**, R. Anderson, and A. Ridgwell. 2008. In Search of the Deglacial Carbonate Preservation Maximum: Why is it Missing? Goldschmidt Conference, University of British Columbia, Vancouver Canada.
- Mekik, F. A.**, M. Kienast, S. Kienast, R. Francois, P. Loubere and A. Mix, 2007. Deglacial sea surface and deep chlorophyll maximum temperature variations in the eastern equatorial Pacific: implications for regional palaeoceanography, AGU Fall Meeting, San Francisco, CA.
- Francois, R. **Mekik F. A.**, N. Noll\*, 2007. Multi-proxy reconstruction of deep sea calcite dissolution from the subtropical South Atlantic Ocean: foraminifer fragmentation, shell weight and Mg/Ca. AGU Fall Meeting, San Francisco, CA.
- Mekik, F. A.**, 2007. Rethinking the Meaning of Success in Academia: Strategies of a Female Scientist from a Far – Away Land. AGU Fall Meeting, San Francisco, CA.
- Mekik, F. A.** and R. François, 2006. Mg/Ca in planktonic foraminifers: A dual proxy for deep sea calcite dissolution and water temperature both at the sea surface and at thermocline depths, AGU Fall Meeting, San Francisco, CA.
- Mekik, F. A.**, François, R., Loubere, P., Ridgwell, A. 2006. Is Carbonate Compensation from the Last Deglaciation Responsible for the Gradual Increase in Atmospheric pCO<sub>2</sub> During the Holocene? Ocean Sciences Meeting, AGU, ASLO, TOS, Honolulu, HI.
- Mekik, F. A.**, 2005. Modeling Deep Sea Delta Calcite in the Eastern Equatorial Pacific Over the Last 25,000 Years: Normalizing Sedimentation Rate with Excess <sup>230</sup>Thorium Activity, or Not? AGU Fall Meeting, San Francisco, CA.
- Mekik, F. A.**, Loubere, P., François, R., Richaud, M., 2005. *INVITED* Reconstructing the Rain Ratio in the Eastern Equatorial Pacific. AGU Chapman Conference on the Role of Marine Organic Carbon and Calcite Fluxes in Driving Global Climate Change, Past and Future, Woods Hole, MA.
- Mekik, F. A.**, Loubere, P. W., Archer, D. E., 2004. Does the Rain Ratio Reign in the Eastern Equatorial Pacific? In search of the Ideal Carbonate Dissolution Index and Changes in Bottom Water Carbonate Ion Saturation over the Last 25,000 years, AGU Fall Meeting, San Francisco, CA.
- Mekik, F. A.**, 2004 *INVITED* Anthropogenic CO<sub>2</sub> Emissions and the Global carbon Cycle, 5<sup>th</sup> Annual Conference on Turkish Stratigraphy and Paleontology, Urgup, Turkey, Sep. 19-27.
- Mekik, F. A.**, Loubere, P. W., and Archer, D., 2004. Reconstructing Changes in Deep Sea [CO<sub>3</sub><sup>-</sup>] in the EEP Over the Last 25000 Years, International Conference on Paleoceanography - 8, Biarritz, France.

- Mekik**, F. A., Loubere, P.W., and Archer, D., 2003. Testing Methods for Reconstruction of Degree of Calcite Saturation / Changes in Carbonate Ion Concentration in the Deep Sea Over the Last 25000 Years. AGU Fall Meeting.
- Loubere, W. P., **Mekik**, F., François, R., and Pichat, S., 2003. Normalization for Sediment Redistribution Yields Entirely Different Biogenic Fluxes for the LGM to Present in the Eastern Equatorial Pacific. AGU Fall Meeting.
- Riemersma, P. and **Mekik**, F. A., 2003. Promoting Undergraduate Research at Grand Valley State University, AGU Fall Meeting.
- Loubere, W. P. and **Mekik**, F. 2003. Tropical Pacific Biogeochemical Role in Global Climate Change Constrained by the Southern Ocean, GSA Annual Meeting, Seattle, WA.
- Mekik**, A. F., Loubere, P., Archer, D., and François, R. 2002. Reconstructing Open Ocean Calcite Fluxes for the Eastern Equatorial Pacific [EEP]: LGM to Present, AGU, Fall Meeting.
- Loubere, P., Archer, D. and **Mekik**, F., 2002. New Mechanism for Tropical Ocean Influence on the Marine Carbon Cycle and Atmospheric CO<sub>2</sub>, AGU, Fall Meeting.
- Loubere, W. P. and **Mekik**, F., 2002. Reconstruction of Paleo-Productivity and Paleo-Calcite Flux for the Eastern Equatorial Pacific: Proxy Comparisons. AGU Ocean Sciences Meeting, Honolulu, Hawaii.
- Mekik**, A. F., Loubere, P. and Archer, D., 2001. Oceanic Regulation of Atmospheric CO<sub>2</sub> in the Eastern Equatorial Pacific by Dissolution of Deep-Sea Carbonates, 6th Annual NASA MSGC Conference Ann Arbor, Michigan.
- Edwards, B., Cole, K., Mattox, S., **Mekik**, F., Neal, W., Riemersma, P., Tenbrink, N., Videtich, P., Weber, J., and Wilson, G., 2001. Curricula Revitalization in the Department of Geology, Grand Valley State University, GSA, Abstracts with Programs, Annual Meeting, Boston.
- Mekik**, A. F., Loubere, P. and Archer, D., 2000. Surface Ocean Bioproductivity Influence on Deep-Sea Calcite Dissolution: New Transfer Function Results. AGU, Fall Meeting.
- Mekik**, A. F., Loubere, P., and Archer, D., 2000. New Transfer Function for Quantifying Paleo-Flux of Calcite to the Seabed. AGU, Spring Meeting, Washington, DC.
- Mekik**, A. F. and Ling, H. Y., 2000. Late Jurassic and Cretaceous radiolarian biostratigraphy from northwest Turkey, International Association of Radiolarian Paleontologists Meeting 2000, Reno, Nevada: p. 50.
- Mekik**, A. F., Loubere, P. and Archer, D., 1999. Quantifying Calcite Dissolution in the Deep Sea: A New Transfer Function. GSA, Abstracts with Programs, Vol. 31, No 7.
- Mekik** A. F. 1998. Jurassic-Cretaceous Pantanelliidae (Radiolaria) from Northwest Turkey. The Third International Turkish Geology Symposium, Work in Progress on the Geology of Turkey and its Surroundings, Abstracts, p. 209.
- Mekik** A. F. 1998. Late Cretaceous Radiolarians and their Paleo-Environmental Significance from the Ankara Region, Turkey. Third International Turkish Geology Symposium, Work in Progress on the Geology of Turkey and its Surroundings, Abstracts, p. 214.

**Mekik, A. F., Altiner, D., and Blome, C.D., 1998.** Depositional History of a Sedimentary Mélange Within an Ophiolitic Suture Zone, Ankara Region, Turkey, GSA, Abstracts with Programs, Vol. 30, No. 7, p. 338.

**Mekik, A. F., Ling, H. Y., Altiner, D. and Özkan-Altiner, S., 1997.** Radiolarians Across the Jurassic/Cretaceous Boundary near Ankara, Turkey. INTERRAD VIII (Eighth meeting of the international association of radiolarian paleontologists) Abstracts Volume, p. 95.

## *Cruises*

Research Cruise to Weather Station Papa in the NE Pacific on the *J. P. Tully* (Sept. 20 – October 9, 2006)

Teaching cruises (3-4 per semester) on the *D. J. Angus* on Lake Michigan and the Grand River.

## *Service*

### ***Within the Scientific Community:***

*American Geophysical Union Paleoceanography/Paleoclimatology Focus Group Secretary 2009-2011.*

*Member of Program Committee for Fall Meeting of the American Geophysical Union, 2007-2008.*

<http://www.agu.org/meetings/fm08/index.php/Program/HomePage>

*Convener for 3 sessions at the American Geophysical Union Annual Fall Meeting 2008:*

*Tropical Pacific Paleoceanography During the Late Quaternary*

*Communicating Climate Change: Eradicating Common Misconceptions in Climate Science in the Media and General Public*

*Convener for 2 sessions at the American Geophysical Union Annual Fall Meeting 2007:*

*Carbonate Dissolution in Deep Sea Sediments: Proxies, Models and Applications both from the Paleo-Record and the Modern Ocean*

*Mg/Ca Paleo-thermometry: Advances, Applications and Caveats*

*NSF Panelist, Ocean Sciences Division, Marine Geology and Geophysics.*

*Interpreter/translator of manuscripts for *Micropaleontology* from Turkish to English.*

*Reviewer on a regular basis for journal articles in *Science*, *Deep Sea Research*, *Geophysical Research Letters*, *G<sup>3</sup>*, etc; scientific project proposals to the National Science Foundation, American Chemical Society Petroleum Research Fund, and Norwegian national science council; as well as several chapters in introductory geology textbooks.*

*Co-Editor for special volume in *Micropaleontology* for INTERRAD IX.*

### ***Within the College/University (GVSU)***

*Chair of the Personnel Committee* for the College of Liberal Arts and Sciences (2008-2010)

*Assistant Chair of the Personnel Committee* for the College of Liberal Arts and Sciences (2006-2008).

*Member of the Personnel Committee* for the College of Liberal Arts and Sciences (2005-2011)

*Faculty to Faculty Mentor* (2009- present)

*WRT 305 Waiver Exam Grader* (2006-2009)

*Acting Chair for Geology Department*, intermittently throughout summer and fall, 2007; and summer 2008.

Participate Regularly in *Inclusion Advocate Training* (2009-present)

*Member of NSF Advance STRIDE* for the recruitment and retention of women in academia (2006-2008)

*Member of the Supplementary Writing Skills Committee* (2005-2007)

*Contributor to Regional Science Olympiad: Fossils, Rocks and Minerals, Oceanography* (1999-present)

### ***Within Teaching Responsibilities:***

*Mentor* for undergraduate research (J. Woudstra, B. Adkins, L. Raterink, J. Deloge, N. Noll, R. Mulligan, E. Naughton, Michael Wicker, Sarah Clark, Calvin Vanderboon)

## ***Outreach***

Peer-reviewed blog posts on [www.realclimate.org](http://www.realclimate.org):

[1] *Sweatin' the Mediterranean Heat*, October 22, 2007

[2] *Ozone Hole Leaks and Other Tales*, April 5, 2007

(also has a permanent link from The Weather Channel's archives page)

*Turkish translations* for selected blogs on [www.realclimate.org](http://www.realclimate.org)

*Turkish podcasts* for various climate related issues. (<http://h2opodcast.com/Turkce.html>)

## ***Theses***

**Mekik**, A. F. 1999 *Late Jurassic and Cretaceous Radiolarian Biochronology in Resedimented Slope Deposits near Ankara, Turkey*. Dissertation, Northern Illinois University, De Kalb, Illinois, 337pp. *Dissertation Adviser*: Hsin Yi LING (retired)

**Mekik**, A. F. 1994. *An attempt to reconstruct the Jurassic-Cretaceous successions of the Damlaagaçderesi Sedimentary Mélange: stratigraphic and micropaleontologic analyses*. MS Thesis, Middle East Technical University, Ankara, 526 pp.

## ***Languages***

Turkish (native), English (fluent), French (good), German (fair)