

## **Bopaiah Achia Biddanda**

Professor of Water Resources

Annis Water Resources Institute (AWRI), Grand Valley State University (GVSU)

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### **(a) Professional Preparation:**

|       |                |                             |      |
|-------|----------------|-----------------------------|------|
| B.Sc. | Biology        | Bangalore University, India | 1978 |
| M.Sc. | Marine Biology | Karnatak University, India  | 1980 |
| Ph.D. | Ecology        | University of Georgia       | 1987 |

(Thesis: *New Mechanisms for Energy Flow in the Ocean's Food Web: Microbial Use of Detritus*).

### **(b) Appointments:**

- 2013: Professor of Water Resources, Grand Valley State U (GVSU)-Annis Water Res. Inst. (AWRI).  
*Research Area: Aquatic Microbial Ecology and Carbon Biogeochemistry*  
*Teaching: BIO 699 Microbial Ecology; WAT/BIO 550 Ecosystems; BIO 380 Marine Biology*
- 2002-09/09-13: Assistant Professor/Associate Professor and Research Scientist, GVSU-AWRI.
- 1998-2002. Research Associate, Dept of Ecology, Evolution and Behavior, Univ. Minnesota.
- 1997-1998. Visiting Professor of Marine Microbiology, Univ. of Rio Grande, Brazil.
- 1992-1997. Research Scientist Associate, Univ. of Texas Marine Science Institute.
- 1987-1991. Guest Scientist, Alfred Wegener Institute for Polar and Marine Research, Germany.
- 1982-1987. Graduate Research Assistant, Institute of Ecology, Univ. of Georgia.
- 1980-1982. Junior Research Fellow, National Institute of Oceanography, India.

### **Select Awards:**

*Best Ecology Student Paper* (Marine Ecology Progress Series 1985), U. Georgia (1985).

*Chandler-Misener Award* by the International Association for Great Lakes Research (2009).

### **(c) Products**

#### **(i) 5 publications closely related to project: (\* Graduate student; \*\* Undergraduate student)**

Weinke, A.D\*, S. T. Kendall, D. J. Kroll\*\*, E. A. Strickler\*\*, M. E. Weinert\*\*, T. M. Holcomb\*, D. K. Dila\*, A. A. Defore\*, M. J. Snider\*, L. C. Gereaux\*, B.A. Biddanda (2014). Systematically variable planktonic carbon metabolism along a land-to-lake gradient in a Great Lakes coastal zone. *J. Plankton Research* 36: 1528-1542.

<http://plankt.oxfordjournals.org/content/36/6/1528.full.pdf+html>

McNair, J. N., L. C. Gereaux\*, A. Weinke\*\*, M. Sesselmann\*. S. Kendall and B. Biddanda (2013): New methods for estimating components of lake metabolism based on free-water dissolved-oxygen dynamics. *Ecological Modelling* 263: 251-263.

Nold, S. C., M.J. Bellecourt\*\*, S.T. Kendall, S.A. Ruberg, T. Sanders\*, V. Klump & B.A. Biddanda (2013): Underwater sinkhole sediments sequester Lake Huron's carbon. *Biogeochemistry* 115:235-250.

Biddanda, B., S. Nold, G. Dick, S. Kendall, J. Vail, S. Ruberg and C. Green (2012). Rock, Water, Microbes: Sinkholes in Lake Huron are habitats for ancient microbial life. *Nature Education Knowledge* 3 (3): 13. <http://www.nature.com/scitable/knowledge/library/rock-water-microbes-underwater-sinkholes-in-lake-25851285>

Johengen, T.H., B. A. Biddanda and J. B. Cotner (2008): Stimulation of Lake Michigan plankton metabolism by sediment resuspension and river runoff. *J. Great Lakes Res* 34: 213-227.

**(ii) Five other significant publications: (\* Graduate student; \*\* Undergraduate student)**

- Biddanda, B. A., S. C. Nold, S. A. Ruberg, S. T. Kendall, T. G. Sanders,\* and J. J. Gray (2009). Great Lakes Sinkholes: A Microbiogeochemical Frontier. Eos, Transactions, AGU, 90: 61-62.
- Biddanda, B. A., A. Steinman, L. Nemeth, Y. Hong and S. Kendall (2008). Nutrient bioassays of plankton biomass and metabolism in an urbanized drowned river-mouth lake (Mona Lake, Michigan). J. Freshwater Ecology 23: 41-53.
- Biddanda, B. A., D. F. Coleman, T. H. Johengen, S. A. Ruberg, G. A. Meadows, H. W. VanSumeren, R. R. Rediske and S. T. Kendall (2006): Exploration of a submerged sinkhole ecosystem in Lake Huron. Ecosystems, 9: 828-842.
- Biddanda, B. A. and J. B. Cotner (2002): Love handles in aquatic ecosystems: Role of dissolved organic carbon drawdown, resuspended sediments and terrigenous inputs in the carbon balance of Lake Michigan. Ecosystems, 5:431-445.
- Cotner, J. B. and B. A. Biddanda (2002): Small players, large role: Microbial influence on biogeochemical processes in pelagic aquatic ecosystems. Ecosystems, 5: 105-121.

**(d) Synergistic Activities:**

- Teaching Graduate and Undergraduate GVSU Courses: WAT/BIO 530 Ecosystem Processes; BIO 699 Aquatic Microbial Ecology; BIO 380 Marine Biology.
- Provide job shadow opportunities to high school students and guest lectures to K-12 classes at GVSU.
- Supervisor, Regional Science Olympiad Water Quality events (2003-2013) and all Super Science Saturday events at GVSU (since 2003).
- Service on Editorial Board: J. Plankton Research (2002-2014) and Aquatic Microbial Ecology (2005.....).
- Executive Board Member and GVSU Affiliate to Michigan Space Grants Consortium, NASA.
- Special session organizer and chair: International Association for Great Lakes Research Conferences at U. Toronto in 2010 and at McMaster U in 2014.

**(e) Collaborators & Other Affiliations**

**Collaborators:**

J. Vail (GVSU)  
J. McNair (GVSU)  
A. Steinman (GVSU)  
G. Dick (U. Michigan)  
J. Cotner (U. Minnesota)  
T. Johengen (U. Michigan)  
S. Nold (U. Wisconsin-stout)  
V. Klump (U. Wisconsin-Milwaukee)  
S. Kendall (Muskegon Community College)  
R. Green (Thunder Bay National Marine Sanctuary, NOAA)  
S. Ruberg (Great Lakes Environmental Research Laboratory, NOAA)

**Graduate Advisors and Postdoctoral Sponsors:**

Lawrence Pomeroy (Doctoral) – University of Georgia.  
Victor Smetacek (Post-doctoral) – Alfred Wegener Inst. Marine & Polar Res., Germany.  
Ronald Benner (Post-doctoral) – University of Texas (now at University of South Carolina).  
James Cotner (Post-doctoral) – University of Minnesota.

**Graduate Advisees:**

Anthony Weinke, GVSU (2014-present); Michael Snider and Leon Gereaux, GVSU (M.S. 2012-present)  
Nicole Horne, GVSU (M.S., 2011-present); Deborah Dila, GVSU (M.S., 2010 – 2014)  
Angela Defore, GVSU (M.S., 2009-2013); Garry Sanders, GVSU (M.S., 2006-2009)  
Total number of graduate students advised: 7 (Total number of undergraduates advised: 28).