

Biographical Sketch

Erica B. Young

Assistant Professor
Department of Biological Sciences,
University of Wisconsin-Milwaukee
3209 N Maryland Ave, Milwaukee WI 53211
Ph. 414 229-3257 ebyoung@uwm.edu

Born : Perth, Western Australia, a while ago now

Citizenship: Australian (Permanent resident in USA)

Professional Preparation

| | | |
|---------------------------------|---------------------------------------|-------------------------|
| University of Western Australia | Botany (1 st class Honors) | BS 1988 |
| Monash University, Australia | Plant Physiology | PhD 1999 |
| Queen's University of Belfast | Algal ecology | Postdoctoral 1999- 2002 |

Appointments

Assistant Professor, Univ Wisconsin - Milwaukee, Dept Biological Sciences. 2002 –
Postdoctoral Research Associate, Queen's University of Belfast 1999 – Sept 2002.
Postdoctoral Research Assistant (Algal Physiology), Monash University, Australia 1999.
Research Assistant, Uppsala University, Sweden 1990-1992.
Field Research Assistant, University of Western Australia 1992-1993.
Research Assistant and Teaching Assistant, University of Western Australia 1989-1990.

Publications

- Young, E.B., Dring, M.J. and Berges, J.A. 2007. Intertidal *Fucus* species show novel patterns of nitrate reductase activity, unaffected by irradiance and ammonium. *Journal of Phycology*. In Press.
- Young E.B., Dring M.J., Savidge G., Birkett D.A. and John A. Berges. 2007 Seasonal variations in nitrate reductase activity and internal N pools in intertidal brown algae are correlated with ambient nitrate concentrations. *Plant Cell and Environment* 30: 764-774.
- Young, E.B. and Beardall J. 2005. Modulation of photosynthesis and inorganic carbon acquisition in a marine microalga by nitrogen, iron and light availability. *Canadian Journal of Botany* special CCM Issue. 83 (7): 917-928.
- Young, E., van Elven, B., Lavery, P., Berges, J. and Dring, M. 2005. Inorganic nitrogen profiles in seagrass meadows and spatial patterns of nitrate reductase activity in macroalgal epiphytes. *Marine Ecology Progress Series* 288: 103-114.
- Young, E, Bootsma, H and Berges J. 2004. Can Activity of Enzymes Involved in Nutrient Assimilation be Useful as Indices of Nutrient Status in *Cladophora*? 'Cladophora Research and Management in the Great Lakes' A Workshop at the Great Lakes WATER Institute, UWM, Dec 8, 2004. http://www.uwm.edu/Dept/GLWI/cladophora/page_report.html
- Bootsma, H, Young, E.B. and Berges, J.A. 2004. Temporal and spatial patterns of *Cladophora* biomass and nutrient stoichiometry in Lake Michigan. *Cladophora Research and*

- Management in the Great Lakes' A Workshop at the Great Lakes WATER Institute, UWM, December 8, 2004. http://www.uwm.edu/Dept/GLWI/cladophora/page_report.html*
- Young, E. and Beardall, J. (2003) Photosynthetic function in *Dunaliella tertiolecta* during a nitrogen starvation and recovery cycle. *Journal of Phycology* 39: 897-905.
- Young, E. and Beardall, J. 2003. Transient perturbations in chlorophyll a fluorescence elicited by nitrogen re-supply to nitrogen-stressed microalgae: distinct responses to NO₃⁻ versus NH₄⁺. *Journal of Phycology* 39: 332-342.
- Young, E., Giordano, M. and Beardall, J. 2001. Inorganic carbon acquisition by *Dunaliella tertiolecta* (Chlorophyta) involves external carbonic anhydrase and direct HCO₃⁻ utilisation (insensitive to the anion exchange inhibitor DIDS). *European Journal of Phycology* 36: 81-88.
- Beardall, J. Young, E. and Roberts, S. 2001. Interactions between nutrient uptake and cellular metabolism: approaches for determining algal nutrient status. *Aquatic Sciences*. 63 (1) 44-69.
- McMahon, K, Young, E, Montgomery, S, Cosgrove, J, Wilshaw, J and Walker, DI . 1998. Status of a shallow seagrass system, Geographe Bay, southwestern Australia. *Journal of the Royal Society of W.A.* 80: 255-262.
- Giordano, M., Young, E. and Beardall, J. 1997. Evidence for the absence of a DIDS-sensitive Anion-Exchange type HCO₃⁻ transporter in *Dunaliella tertiolecta*. *Plant Physiology* 114: 1103 Suppl. S Jul 1997.
- Beardall, J. Young, E. and Roberts, S. 1995. Interactions between photosynthesis and the acquisition of N and P in *Dunaliella*. In P.Mathis (Ed) 'Photosynthesis : from Light to Biosphere" Vol. V pp435-438. Kluwer Academic Publishers.
- Johansson, S. Wide, M., Young, E. and Lindblad, P. 1993. Expression of alkaline phosphatase in mature mouse placenta visualised by *in situ* hybridization and enzyme histochemistry. *Anatomy and Embryology* 187: 409-414.
- Atkins, C.A., Storer, P.J. and Young, E.B. 1991. Translocation of nitrogen and expression of nodule-specific uricase (nodulin-35) in *Robinia pseudoacacia*. *Physiologia Plantarum* 83: 483-491.

Synergistic Activities

- Manuscript reviewer for the following journals: *Aquaculture, Aquatic Botany, Botanica Marina, Conservation Biology, European Journal of Phycology, Journal of Experimental Botany, Journal of Phycology, Limnology and Oceanography, Marine and Freshwater Research, Marine Biology, Marine Ecology Progress Series, New Phytologist, Photosynthesis Research, Phycologia.*
- Proposal Reviewer for National Science Foundation (Biological Oceanography program) (1 each in 2004, 2005 and 2006) and Israel Science Foundation (2004).
- Mentor in National Science Foundation Funded REU program in Aquatic Sciences (mentored 1 minorities student through that program). Mentor for UWM undergraduate research programs UROP and McNair program for minorities students.
- Mentored two high school students for individual science projects in 2005 and 2006.
- Co-organizer and Chair for conference sessions at European Phycological Congress, Belfast, UK 2003, and International Association for Great Lakes Research (IAGLR) 2005. Co-organizer - '*Cladophora Research and Management in the Great Lakes' Workshop at Univ Wisconsin-Milwaukee, 2004.*

Contributed photographs and interviews to Christian Science Monitor and Fox 6 News on Cedarburg Bog and Great lakes nuisance algal blooms. Panel member, Public forum on *Cladophora* Issues on Lake Michigan shoreline, Milwaukee July 2004.

Collaborators (last 5 years)

Stefan Schnitzer, John Berges, Harvey Bootsma, Mark Schwartz, John Janssen, Val Klump (University of Wisconsin-Milwaukee), R. Michael McKay and George Bullerjahn (Bowling State Univ, OH), Steven Wilhelm (Univ Tennessee), Claudia Benitez-Nelson, Tammi Richardson (Univ South Carolina), Matthew Dring (Queen's Univ Belfast, UK), Paul Lavery (Edith Cowan Univ, Australia), Charles Kerfoot (Michigan Tech Univ), Nancy Targett (Univ Delaware), PhD Advisor - John Beardall (Monash University).

Advisees

Graduate Students as Major Advisor: Chelsea Lowes (PhD), Alicia Hanson (MS), Terry Bott (MS), Grace Jennings (MS, Queen's University)

Graduate Student Advisory Committees: 11 students (2002 – present)

Postdoctoral Associates - Jason Mills (University of Wisconsin - Milwaukee)

Special Honors and Awards

- 1986 Maurice Buchan Prize in Botany, University of Western Australia.
- 1987 W.E. Blackall prize in Botany major, University of Western Australia.
- 1994-7 Monash University post-graduate scholarship.
- 1996 Monash University Travel Scholarship.
- 2004 Elected to Sigma Xi, The Scientific Research Society

Papers presented at meetings

Mills JE, Young EB, Meyer G, Reinartz J. Vegetation Change in a Sensitive Forested Wetland in the Upper Midwest Ecological Society of America Annual Conference San José, CA, August 2007.

Schroeder J, Mills J and Young E. Historical land classification at the Cedarburg Bog. Presentation to Cedarburg Bog Research Group, June 29, 2007.

Sippel D, Reinartz J, Mills J and Young E. Tamarack (*Larix laricina*) and Buckthorn (*Rhamnus frangula*) growth and habitat in the Cedarburg Bog. Presentation to Cedarburg Bog Research Group, June 29, 2007.

Young, EB, Pansch L. and Tucker R. Organic P Use Supports Blooms Of The Nuisance Alga *Cladophora* In Nearshore Lake Michigan. International Association of Great Lakes Research 50th anniversary meeting, Penn State, May 2007.

Young, E, Pansch L. and Tucker R. 2007. Nearshore nutrient fluxes and organic P use by benthic algae. American Society of Limnology and Oceanography Meeting Santa Fe, February 2007.

Young, E, Bootsma, H, Roth, T, von Korff, B and Berges J. 2006. Role of macroalga/epiphyte assemblages in nutrient cycling in nearshore Lake Michigan. American Society of Limnology and Oceanography. Victoria, Canada. June 2006.

Young, E, Bootsma, H and Berges J. 2005. The Recent Resurgence of *Cladophora* sp. on the Western Shore of Lake Michigan: Research Perspectives. State of Lake Michigan Conference, Green Bay, WI, 2-3 November, 2005.

Bootsma, H.A. Young, E.B., Berges, J.A. and Maybruck, B. 2005. Phosphorus Dynamics in the Lake Michigan Nearshore Zone. State of Lake Michigan Conference, Green Bay, WI, 2-3 November, 2005.

- Beardall, J, Young, E. 2005. Interactions between photosynthesis, respiration and nutrient acquisition in algae. Int Botanical Congr, Vienna, 17-23 July 2005. **[Invited Paper]**.
- Young, E, Bootsma, H and Berges J. 2005. Alkaline phosphatase and chlorophyll a fluorescence suggest P and light limitation of *Cladophora* in nearshore Lake Michigan. International Association of Great Lake Research Annual Conference. Ann Arbor, Michigan. May 23 - 27, 2005. **[Invited Paper]**.
- Bootsma, H, Young, E and Berges J. 2005. Temporal and spatial patterns of *Cladophora* biomass and stoichiometry in Lake Michigan. International Association of Great Lake Research Annual Conference. Ann Arbor, Michigan. May 23 - 27, 2005. **[Invited Paper]**.
- Young, E, Berges, J, and Bootsma, H. 2005. *Cladophora* Biomass and Nutrient Status in Lake Michigan. 'Nuisance Algae in Lake Michigan' Public Forum and workshop at Cleveland, Feb 18, 2005, Cleveland, WI. **[Invited Paper]**.
- Young, E, Bootsma, H and Berges, J. 2005. *Cladophora* in Lake Michigan: Current perspectives from the research community. 'Nuisance Algae in Lake Michigan' Public Forum and workshop at Cleveland, Feb 18, 2005, Cleveland, WI. **[Invited Paper]**.
- Young, E. and Ash, V. 2005. Freezing stress in *Cladophora*: Can drift which collects on winter beaches stimulate spring growth? International Association of Great Lake Research Annual Conference. Ann Arbor, Michigan. May 23 - 27, 2005. [poster]
- Young, E, Bootsma, H and Berges J 2004. Can Activity of Enzymes Involved in Nutrient Assimilation be Useful as Indices of Nutrient Status in *Cladophora*? '*Cladophora Research and Management in the Great Lakes*' A Workshop at the Great Lakes WATER Institute, University of Wisconsin-Milwaukee, December 8, 2004. **[Invited Paper]**.
- Bootsma, H, Young, E.B. and Berges, J.A. 2004. Temporal and spatial patterns of *Cladophora* biomass and nutrient stoichiometry in Lake Michigan. *Cladophora Research and Management in the Great Lakes*' A Workshop at the Great Lakes WATER Institute, University of Wisconsin-Milwaukee, December 8, 2004. **[Invited Paper]**.
- Young, E.B. and Beardall J. 2004. Modulation of photosynthesis and inorganic carbon acquisition in a marine microalga by nitrogen, iron and light availability. Vth International Symposium on Inorganic Carbon Utilization by Aquatic Photosynthetic Organisms. Montreal, Canada **[Invited Paper]**.
- Young, E.B. 2003. Regulation of Nitrate Reductase Activity in Irish *Laminaria* and *Fucus* species. 3rd European Phycological Congress. Belfast, July 21-26, 2003.
- Young E.B. 2002. Transient changes in chlorophyll a fluorescence following nitrogen resupply – A diagnostic tool for assessing nitrogen limitation in phytoplankton? Phytoplankton Productivity: An Appreciation of 50 Years of the Study of Production in Oceans and Lakes, Bangor, March 18 – 22, 2002.
- Young, E., J. Berges and M. Dring. 2001. Distinct patterns in regulation of nitrate metabolism in brown algae from Strangford Lough, Ireland. International Phycological Congress, Greece, August 2001.
- Young, E., J. Berges and M. Dring. 2001. Diel variation in nitrate reductase activity in fucoid brown macroalgae. British Phycological Society Meeting, Liverpool U.K. January 2001.
- Young, E. 2000. Transient changes in chlorophyll a fluorescence following nitrogen resupply - a diagnostic tool for assessing nitrogen limitation in phytoplankton? American Society of Limnology and Oceanography, Copenhagen, Denmark June 5-9, 2000.
- Young, E. 2000. Modulation of active inorganic carbon uptake efficiency in response to environmental conditions. British Phycological Society Meeting, Birmingham, U.K. January 2000.
- Young, E. and Beardall, J. 1999. Maintenance of inorganic carbon uptake efficiency despite loss of photosynthetic capacity under iron limitation. 'Primary Productivity of Planet Earth' conference, Plymouth U. K. September 1999 (poster)

- Young, E. and Beardall, J. 1998. Transient changes in chlorophyll a fluorescence elicited by nitrogen re-supply to nitrogen-limited microalgae. Australian Society of Plant Physiologists annual conference, Adelaide. September, 1998. (poster)
- Young, E. and Beardall, J. 1998. External carbonic anhydrase activity in *Dunaliella tertiolecta* under different pH and cell density conditions - a response to CO₂ supply? Third Int. Symposium on Inorganic Carbon Utilisation by Aquatic Photosynthetic Organisms, Vancouver. August 1997. (poster)
- Giordano, M., Young, E., Beardall, J. 1997. Absence of a DIDS-sensitive Anion-Exchange type HCO₃⁻ transporter in *Dunaliella tertiolecta*. American Soc. Plant Physiologists conference, Vancouver. July 1997. (poster).
- Young, E.B. 1997. Nitrogen regulation of inorganic carbon acquisition in a marine microalga. Australian Society of Phycologist and Aquatic Botanist's conference Hobart, Tasmania January 7 - 12, 1997.
- Young, E. and Beardall, J. 1997. Does nitrogen limitation affect carbon uptake efficiency in microalgae? European Phycological Congress, Köln, Germany, August 11- 16, 1996 (poster)
- Young, E. and Beardall, J. 1995. Perturbations in chlorophyll fluorescence following NH₄⁺ enrichment in N-limited *Dunaliella tertiolecta*. Aust. Soc. Plant Physiologists conference, Sydney, Sept. 1995.
- Beardall, J. Young, E. and Roberts, S. 1995. Interactions between photosynthesis and the acquisition of N and P in *Dunaliella*. Xth Photosynthesis Congress. Montpellier, France. August 20-25.
- Young, E. 1991. *In vitro* transcription and northern analysis of nitrogenase genes in *Nostoc* PCC 7120. Scandinavian Nitrogen Fixation Conference, Umeå, Sweden.

Invited Guest Lectures

- Young, E. 2001. Nitrate reductase in macroalgal communities - Strangford Lough, Northern Ireland and Perth coastal waters. Invited guest lecture, Edith Cowan University School of Natural Sciences. March 2001.
- Young, E. 2000. Tales from the Antipodes. Invited lecture, School Biology and Biochemistry, The Queen's University of Belfast. April 2000.
- Young, E. 1999. Inorganic carbon acquisition under nutrient limitation. Invited guest seminar, Carbon Group, Alfred Wegener Inst. Polar and Sea Res., Bremerhaven, Germany. Oct 1999.

Grants, contracts and awards

- Wisconsin DNR – State Wildlife Grant.* J. Reinartz, A. Reis, E. Young, J. Mills and J. Peltier. Conservation, management, and restoration of tamarack in the Southern Tamarack Swamps of Wisconsin. \$74,820 funded. April 2007.
- Milwaukee Metropolitan Sewage District.* H.A. Bootsma and E.B. Young. Water Quality Management Options to Control *Cladophora* Growth in the Milwaukee Region of Lake Michigan, Phase II. \$120,020.95 funded (July 05 - Dec 06)
- Milwaukee Metropolitan Sewage District.* H. Bootsma, and E. B. Young. Water quality management options to control *Cladophora* growth in the Milwaukee Region of Lake Michigan. \$83,493 funded (July 03 - Oct 04).
- Australian Research Council.* J. Beardall and E. Young. Purchase of Pulse Amplitude Modulated Fluorometer. ~US\$19,000. Dec 1994 (at Monash University).
- UWM Center for Water Security.* E. Young and J. Berges. Pilot Study Proposal. Fluorometric monitoring of aquatic toxins using microalgae. \$24,574 (Dec 04 - Dec 05).

UWM Graduate School Research Committee: E.B. Young. Nutrient induced chlorophyll a fluorescence transients as a diagnostic of nutrient limitation in freshwater microalgae. \$14,995 (June 03 - June 04).

UWM Research Growth Initiative. E. Young and J. Berges. Phosphorus Acquisition : Exploring New Paradigms in Freshwater Phytoplankton. Submitted October 2006. \$61,673. July 2007 – Dec 2008.

UWM Research Growth Initiative. E. Young (Lead PI), G. Meyer, J. Reinartz, M. Schwartz, S. Schnitzer. Long Term Ecological Change in a Vulnerable Wisconsin Wetland. Submitted Jan 2006. \$80,156 July 1, 2006 – June 30, 2007.