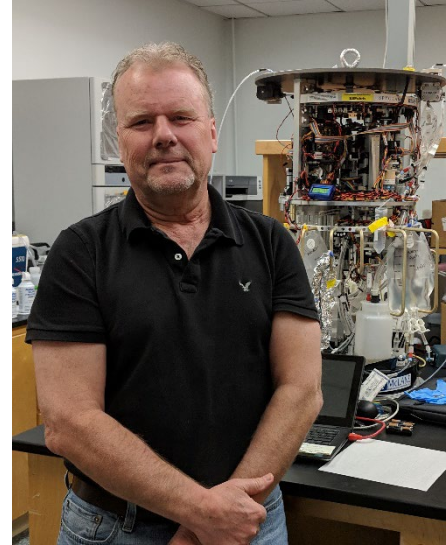


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**Research Interests:** Our group's research efforts are focused on the design, development, and application of detection technologies for marine and freshwater HAB species and their toxins, formatted for autonomous, in-situ platforms. These sensors/platforms have been deployed successfully on fixed-location moorings and on long-range autonomous underwater vehicles (LRAUVs) in multiple US coastal regions. Near-real time data generated by these technologies support NOAA's HAB forecasting portfolio and inform decision making by resource managers charged with protecting public and ecosystem health.

**Selected Publications:**

- Bowers, H.A., Ryan, J.P., Hayashi, K., Woods, A.L., Marin, R. III, Smith, G.J., Hubbard, K.A., Doucette, G.J., Mikulski, C., Gellene, A.G., Zhang, Y., Kudela, R.M., Caron, D.A., Birch, J.M., Scholin, C.A. 2018. Diversity and toxicity of *Pseudo-nitzschia* species in Monterey Bay: Perspectives from targeted and adaptive sampling. *Harmful Algae* 78:129-141.
- Louw, D.C., Doucette, G.J., Lundholm, N. 2018. Morphology and toxicity of *Pseudo-nitzschia* species in the northern Benguela Upwelling System. *Harmful Algae* 75:118-128.
- Ryan, J.P., Kudela, R.M., Birch, J.M., Blum, M., Bowers, H.A., Chavez, F.P., Doucette, G.J., Marin III, R., Mikulski, C.M., Negrey, K., Pennington, J.T., Scholin, C.A., Smith, G.J., Zhang, Y. 2017. Causality of an extreme harmful algal bloom in the central California Current System during the 2014 – 2015 northeast Pacific warm anomaly. *Geophysical Research Letters* 44:5571–5579. doi:10.1002/2017GL072637.
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- Anderson, D.M., Doucette, G.J., Kirkpatrick, G., Scholin, C.A., Paul, J., Trainer, V.L., Campbell, L., Kudela, R.M., Stumpf, R.P., Morrison, J.R. 2013. Harmful algal bloom (HAB) sensors in ocean observing systems. In: Interagency Ocean Observation Committee (Ed.) U.S. IOOS Summit Report: A New Decade for the Integrated Ocean Observing System; Community White Papers, pp. 1-5.

- Parsons, M.L., Dortch, Q., Doucette, G.J. 2013. An assessment of *Pseudo-nitzschia* population dynamics and domoic acid production in coastal Louisiana. *Harmful Algae* 30:65-77.
- Doucette, G.J., Mikulski, C.M., King, K.L., Roth, P.B., Wang, Z., Leandro, L.F., DeGrasse, S.L., White, K.D., De Biase, D., Gillett, R.M., Rolland, R.M. 2012. Endangered North Atlantic right whales (*Eubalaena glacialis*) experience repeated, concurrent exposure to multiple environmental neurotoxins produced by marine algae. *Environmental Research* 112:67-76.
- Ryan, J., Greenfield, D., Marin III, R., Preston, C., Roman, B., Jensen, S., Pargett, D., Birch, J., Mikulski, C., Doucette, G., Scholin, C. 2011. Harmful phytoplankton ecology studies using an autonomous molecular analytical and ocean observing network. *Limnology & Oceanography* 56:1255–1272.
- Scholin, C., Doucette, G., Jensen, S., Roman, B., Pargett, D., Marin III, R., Preston, C., Jones, W., Feldman, J., Everlove, C., Harris, A., Avarado, N., Massion, E., Birch, J., Greenfield, D., Wheeler, K., Vrijenhoek, R., Mikulski, C., Jones, K. 2009. Remote detection of marine microbes, small invertebrates, harmful algae and biotoxins using the Environmental Sample Processor (ESP). *Oceanography* 22:158-167.
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- Greenfield, D.I., Marin, R. III, Doucette, G.J., Mikulski, C.M., Jones, K.L., Jensen, S., Roman, B., Alvarado, N., Feldman, J., Scholin, C.A. 2008. Field applications of the second-generation Environmental Sample Processor (ESP) for remote detection of harmful algae: 2006-2007. *L&O: Methods* 6:667-679.
- Babin, M., Cullen, J.J., Roesler, C.S., Donaghay, P.L., Doucette, G.J., Kahru, M., Lewis, M.R., Scholin, C.A., Sieracki, M.E., Sosik, H.M. 2005. New approaches and technologies for observing harmful algal blooms. *Oceanography* 18:210-227.

#### **Selected Book Chapters:**

- Doucette, G.J., Medlin, L.K., McCarron, P., Hess, P. 2018. Detection and surveillance of harmful algal bloom species and toxins. In: Shumway, S.E., Burkholder, J.M., Morton, S.L. (eds.) *Harmful Algal Blooms: A Compendium Desk Reference*, First Edition. John Wiley & Sons Ltd., UK. pp. 39-113.
- Doucette, G.J., Kudela, R.M. 2017. In-situ and real time identification of toxins and toxin-producing microorganisms in the environment. In: Campàs, M., Diogène, J. (eds.). *CAC: Recent Advances on the Analysis of Marine Toxins*. Elsevier, B.V. 78:411-443. <http://dx.doi.org/10.1016/bs.coac.2017.06.006>.
- Villac, M.C., Doucette, G.J., Kaczmarek, I. 2010. Toxic marine diatoms. In: Smol, J.P., Stoermer, E.F. (eds.), *The Diatoms: Applications for the Environmental and Earth Sciences*. Cambridge University Press, Cambridge, UK. pp. 540-551.
- Scholin, C.A., Doucette, G.J., Cembella, A.D. 2008. Prospects for developing automated systems for in situ detection of harmful algae and their toxins. In: Babin, M., Cullen, J., Roessler, C. (eds.), *Real time coastal observing systems for ecosystem dynamics and harmful algal blooms. Monographs on Oceanographic Methodologies*, Vol. 10. Paris: Intergovernmental Oceanographic Commission of UNESCO. pp. 413-462.
- Doucette, G.J., Maneiro, I., Riveiro, I., Svensen, C. 2006. Phycotoxin pathways in aquatic food webs: transfer, accumulation and degradation. In: Granéli, E., Turner, J.T. (eds.), *Ecology of Harmful Algae*. Springer-Verlag, Heidelberg. pp. 283-295.
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