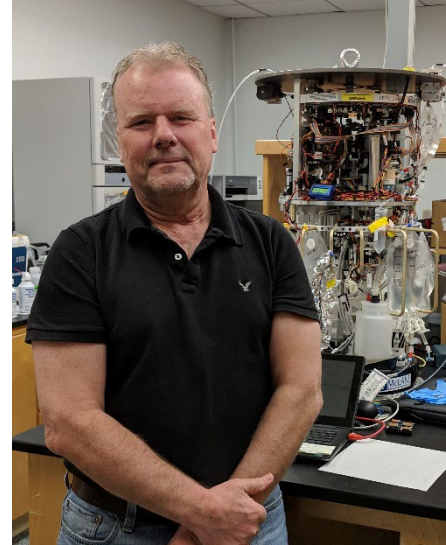


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Research Interests: Our group's research efforts are focused on the design, development, and application of detection technologies for marine and freshwater HAB species and their toxins, formatted for autonomous, in-situ platforms. These sensors/platforms 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. *Geophys. Res. Lett.* 44:5571–5579. doi:10.1002/2017GL072637.
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- 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. *Limnol. Oceanogr.* 56:1255–1272.
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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.
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- 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.
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