

ROSE ANN CATTOLICO

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RESEARCH AND PROFESSIONAL EXPERIENCE

2015- present Professor Emeritus of Biology, University of Washington, WA
1989 - present Adjunct Professor in Ocean Sciences, University of Washington, WA
1986 - 2015 Professor of Biology, University of Washington, WA
1981 - 1986 Associate Professor of Biology, University of Washington, WA
1975 - 1981 Assistant Professor of Biology, University of Washington, WA

EDUCATION AND TRAINING

1973 - 1975 Postdoctoral, McGill University, Canada,
1968 - 1973 Ph.D., State University of New York, Stony Brook, NY
1967 - 1968 Technician, Brookhaven National Laboratories, NY
1965 - 1967 M.A., Temple University, PA

INTERESTS: Biochemical, molecular and genetic analysis of algae particularly in stramenopile and haptophyte taxa. Emphasis: algal/bacterial biome interactions; genome evolution; the biochemistry of photosynthetic processes and lipid production.

RELEVANT PRODUCTS (Contribution by ^post-doctoral fellow; #graduate student; *undergraduate)

Manuscripts in progress

Hovde B., Starkenburg S., Dedoto, C. and R.A. Cattolico (2017). Two geographically distinct fresh water isolates of the genus *Chrysochromulina* (Haptophyta): Genomic differences and evolutionary insights: (to be submitted to PLoS Genetics).

Published manuscripts (2013-2017 only)

Fixen, K., Starkenburg S., Hovde B., Deodato, C., Harwood, C. and R. A. Cattolico. (2016). Genome sequences of 8 bacterial species found in co-culture with the haptophyte *Chrysochromulina tobin*. *Genome Ann.*4(6):e01162-16. doi:10.1128/genomeA.01162-16.
Hunsperger#, H., Ford*, C.J., Miller*, J. S., and R.A.Cattolico (2016). Differential regulation of duplicate light-dependent protochlorophyllide oxidoreductases in the diatom *Phaeodactylum tricornutum*. *PLoS One* 11(7): e0158614. doi:10.1371/journal.pone.0158614
Unkefer, C. J., Sayre, R.T., Magnusin, J.K., Anderson, D.B., Baxter, I., Blaby, I.K., Brown, J.K., Carleton, M., Cattolico et al (20 additional authors) (2016). Review of the algal biology program within the National Alliance for Advanced Biofuels and Bioproducts. *Algal Res.* <http://dx.doi.org/10.1016/j.algal.2016.00>.
Hovde# B., Starkenburg S.R., Deodato C., Chertkov O., Monnat R. and R.A. Cattolico (2015). Genome sequence and transcriptome analyses of *Chrysochromulina*: metabolic tools for enhanced algal fitness in the prominent order Prymnesiales (Haptophyceae). *PLoS Genetics* DOI: 10.1371/journal.pgen.1005469.

- Hunsperger#, H.M., Randhawa*, T., and R. A. Cattolico (2015). Extensive horizontal gene transfer, duplication, and loss of chlorophyll synthesis genes in the algae. BMC Evolutionary Biology 15:16 doi:10.1186/s12862-015-0286-4
- Hovde#, B., Starkenburg, S., Hunsperger#, H., Mercer. L., Deodato, C., Jha, R, Monnat, R., and R.A. Cattolico (2014). The complete mitochondrial and chloroplast genomes of a novel haptophyte, *Chrysochromulina tobin*, reveals unique repeat architectures, and evolutionary signatures. BMC Genomics doi:10.1186/1471-2164-15-604
- Wee J., Millie D.F., Ngan N.K., Patterson J. P., Cattolico, R.A., John D.E., and J.H. Paul (2016). Growth and biochemical responses of *Skeletonema costatum* to petroleum contamination. J. of Appl. Phycol. 28:3317-3329.
- Starkenburg, S.R., Kwon, J., Chertkov, O., Jha, R. , Twary, S. , Rocap, G. and R.A. Cattolico (2014). A Pangenomic analysis of the *Nannochloropsis* organellar genomes reveals novel genetic variation in key metabolic genes. BMC Genomics. doi:10.1186/1471-2164-15-212.
- Tobin#, L., Grunbaum, D., Patterson, J., and R.A. Cattolico (2013). Behavioral and physiological changes during benthic-pelagic transition in the harmful alga, *Heterosigma akashiwo*: Potential for rapid bloom formation. PLoS 1: doi: 10.1371/journal.pone.0076663

Manuscripts of interest before 2013

- Park#, B. S., Cattolico, R. A., Baek, S. H., Ki , J. S, and M.S. Han (2012). Assessment of Eva Green-based quantitative real-time PCR assay for enumeration of the microalgae *Heterosigma* and *Chattonella* (Raphidophyceae) J. of Ap. Phy. 24:1555-1567
- Tobin#, E., Grunbaum, D., and R.A. Cattolico (2011). Pelagic-benthic transition of the harmful alga *Heterosigma akashiwo*: Changes in swimming and their implications for benthic distributions. Harmful Algae. 6: 619-628.
- Lakeman*, M., Von Dassow#, P. and R.A. Cattolico (2009). The strain concept in phytoplankton ecology. Harmful Algae:8: 746-758.
- Bearon^, R. N, D. Grunbaum, and R. A. Cattolico. (2006). Effects of salinity structure on swimming behavior and harmful algal bloom formation in *Heterosigma akashiwo*, a toxic raphidophyte. Mar. Ecol.-Prog. Ser. 306: 153-163.
- Bearon^, R. N., D. Grunbaum, and R. A. Cattolico. (2004). Relating cell-level swimming behaviors to vertical population distributions in *Heterosigma akashiwo* (Raphidophyceae), a harmful alga. Limnol. and Oceanogr. 49: 607-613.
- Connell^, L., Welling*, K. A. and R. A. Cattolico. (1997) Algal organic metabolites affect survival of Pacific oysters, *Crassostrea gigas*, larvae. Journal of Shellfish Res. 16:493-501.
- Boczar^, B. A., Beitler, M. K., Liston, J., Sullivan, J. J., and R. A. Cattolico. (1989). Paralytic shellfish toxins in *Protogonyaulax tamarensis* and *Protogonyaulax catenella* in axenic culture. Plant physiology 88(4):1285-90

PRESENT SYNERGISTIC ACTIVITIES

2002- present: University of Washington Conciliation Panel: We serve the University community through mediation, confidential support in conflict resolution and problem-solving targeted to prevent future conflicts. **2013- present:** EPSCoR program: “Energize New Mexico” is a project funded by NSF to augment the science-education capacity of that state. (External Advisory Board); **2016 – present:** Targeted Algal Biofuels and Bioproducts Program. The goals of this project are to increase in algal biofuel production; improved algal lipids in harvestable product; increase photosynthetic capacity and CO₂ utilization. (External Advisory Board).