**Dr. Lee Kerkhof – Microbial & Molecular Ecology Glossary**

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| **TERM** | **DEFINITION** |
| **Autotrophic Bacteria** | Bacteria make their own food, either through photosynthesis (which uses sunlight, carbon dioxide and water to make food) or by chemosynthesis (which uses carbon dioxide, water and/or compounds like ammonia to make food). |
| **Biomolecule** | Any molecule that is produced by a living organism (i.e., proteins, lipids). |
| **Biosphere** | The global sum of all the ecosystems or the zone of life on Earth. |
| **Bottom-Up Control** | Abundance and/or community structure of organisms are controlled by the supply of resources (light, nutrients, or prey organisms) or from physical factors of the environment. |
| **Ciliates** | A group of protozoans that have a hair-like organelle called cilia that are used in feeding, swimming, crawling, attaching, and sensing. |
| **Deoxyribronucleic Acid (DNA)** | The genetic material (the components of genes), which encode the blueprints that direct and control the development and functioning of all known living organisms (except RNA viruses) |
| **Diel** | A 24-hour period |
| **Flagellates** | Small, eukaryotic organisms with one or more whip-like organelles called flagella. |
| **Fluorescence** | The phenomena of compounds to absorb specific wavelengths of light and then emit different (usually longer) wavelengths of light. This information can be used to determine the concentration or condition of various organisms and substances in the ocean, including phytoplankton. |
| **Heterotrophic Bacteria** | Carbon within the cells is obtained by using organic carbon compounds. |
| **Lipids** | Naturally occurring molecules that include fats, waxes, sterols, fat-soluble vitamins (A, D, E, and K) and others. |
| **Metabolites** | Intermediates and products of metabolism. |
| **Microbe** | An organism that is too small to see which the unaided eye. They are very diverse and can exist as single cells or a cluster of cells. |
| **Microbial Loop** | The trophic pathway in the marine microbial food web where dissolved organic matter (DOM) is returned to higher trophic levels via the incorporation into bacterial biomass. |
| **Niche** | The relational position of a species or population in its ecosystem to each other, often in terms of the resources used. |
| **Nucleic Acid** | Biological molecules essential for life, and include DNA and RNA. |
| **Phytoplankton** | The autotrophic component of the plankton community. |
| **Polymerase Chain Reaction (PCR)** | A technique to amplify a single or a few copies of DNA into thousands to millions of copies of the particular DNA sequence. |
| **Protein** | A biochemical compound consisting of one or more polypeptides that facilitates a biological function. |
| **Ribonucleic Acid (RNA)** | A nucleic acid containing the genetic instructions used in the synthesis of proteins all known living organisms and the genetic information of some viruses. |
| **Spring Bloom** | A large increase in phytoplankton abundance that typically occurs in the early spring and lasts until late spring or early summer. |
| **Stable Isotope Probing (SIP)** | A technique to track the environmental path of a “labeled” compound to demonstrate the formation of new biomass and CO2 or dissolved inorganic carbon. |
| **Terminal Restriction Fragment Length Polymorphism (TRFLP)** | A technique used to profile microbial communities based on the position of a restriction site closest to a labeled end of an amplified gene. |
| **Top-Down Control** | Abundance and/or community structure of organisms is controlled by the predators. |
| **Transect** | A path along which one records and counts occurrences of the phenomena or organisms of a study. |