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| **Summer Placement Project Proposal** |
| Supervisor(s): Prof. Moroz  Nominees in case of absence: Dr John Norbury  Duration of Placement: 9 weeks 4July-2nd Sept.  Date restrictions: I shall be away for a couple of weeks in this period. |
| **Section 1: Project description:**  Project title: Plankton models within Global Climate Models (GCMs)  Include project aims here:  GCMs, coupled nonlinear partial differential equations describing the behaviour of the atmosphere and oceans, can incorporate low-dimensional (of 6-10 dimensions) plankton models without really understanding the dynamics of the plankton models in isolation. We aim to study the intrinsic behaviours of such low-dimensional plankton models, to enable better predictions for the effects of climate change to be made. This builds upon current investigations being undertaken within OCIAM and would involve the bifurcation analysis of nonlinear systems of ordinary differential equations, their numerical integrations and the consequences of incorporating such models within GCMs. |
| **Section 2: Special requirements (skills and experience required):**  Required skills: Able to use Matlab or other scientific computing language in order to integrate systems of nonlinear differential equations; knowledge of dynamical systems theory and bifurcations.  Desired skills: Knowledge of Mathematical Biology/Ecology. |