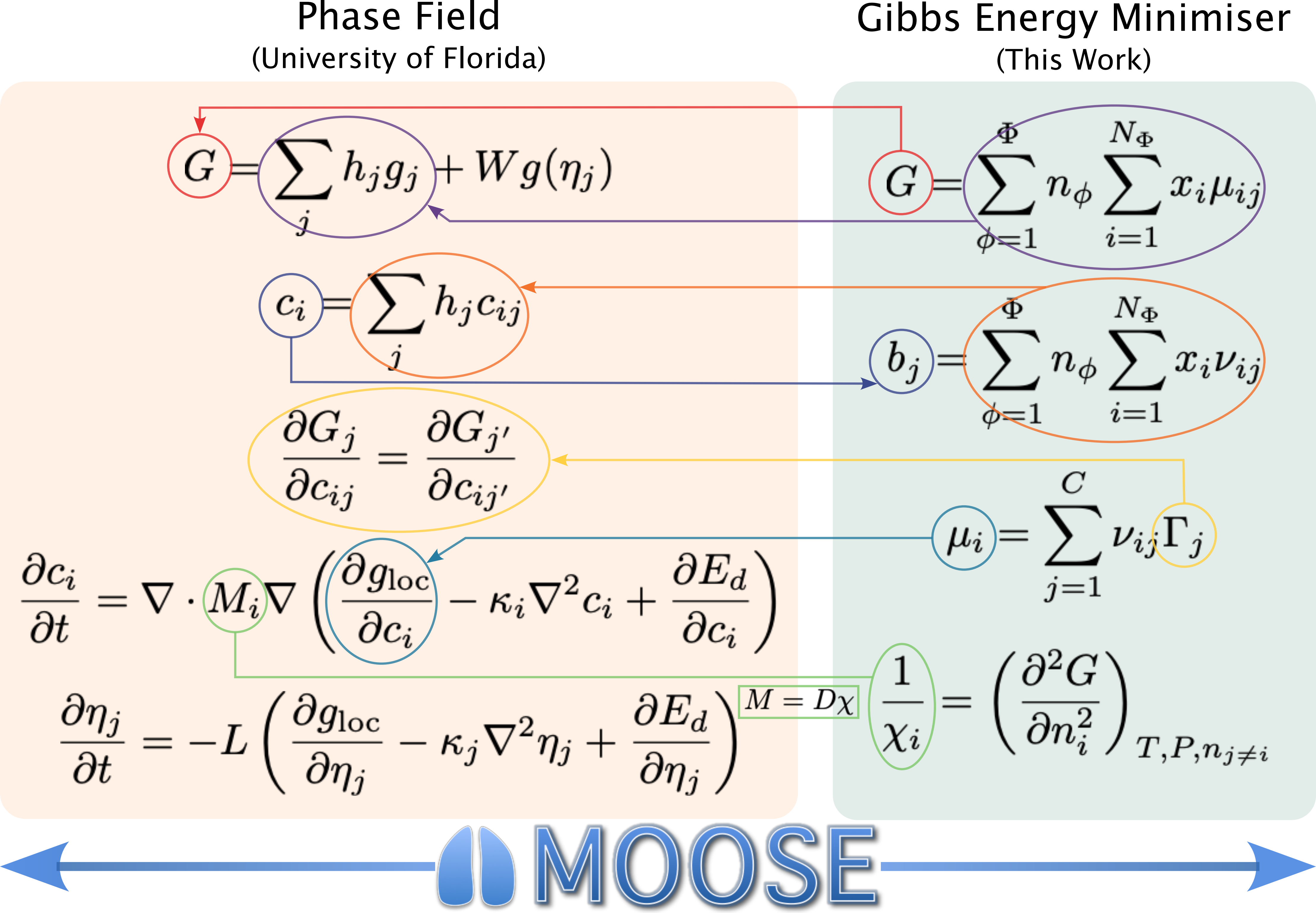
Phase Field
(University of Florida)
Gibbs Energy Minimiser
(This Work)
$G = \sum_j h_j g_j + W g(\eta_j)$
$G = \sum_{\phi=1}^{\Phi} n_\phi \sum_{i=1}^{N_\Phi} x_i \mu_{ij}$
$c_i = \sum_j h_j c_{ij}$
$b_j = \sum_{\phi=1}^{\Phi} n_\phi \sum_{i=1}^{N_\Phi} x_i \nu_{ij}$
$\frac{\partial G_j}{\partial c_{ij}} = \frac{\partial G_{j'}}{\partial c_{ij'}}$
$\mu_i = \sum_{j=1}^{C} \nu_{ij} \Gamma_j$
$\frac{\partial c_i}{\partial t} = \nabla \cdot M_i \nabla \left(\frac{\partial g_{\text{loc}}}{\partial c_i} - \kappa_i \nabla^2 c_i + \frac{\partial E_d}{\partial c_i} \right)$
$\boxed{M = D\chi}$
$\frac{1}{\chi_i} = \left(\frac{\partial^2 G}{\partial n_i^2} \right)_{T,P,n_{j \neq i}}$
$\frac{\partial \eta_j}{\partial t} = -L \left(\frac{\partial g_{\text{loc}}}{\partial \eta_j} - \kappa_j \nabla^2 \eta_j + \frac{\partial E_d}{\partial \eta_j} \right)$
MOOSE