## AMS326 (Numerical Analysis) Spring 2023 © Y. Deng

**Scheme 2** (note the nuances of this from the above):

Given  $x_0$  and  $y_0$ , start iterations.

$$\begin{cases} x_{n+1} = x_n + \underbrace{x_n(\alpha_x - \beta_x y_n)}_{x_n'} \Delta t \\ y_{n+1} = y_n - \underbrace{y_n(\alpha_y - \beta_y x_{n+1})}_{y_n' \text{ with new } x_{n+1}} \Delta t \\ y_n + \underbrace{x_n}_{y_n' \text{ with new } x_{n+1}} \Delta t \\ y_n + \underbrace{x_n}_{y_n' \text{ with new } x_{n+1}} \Delta t \\ \underbrace{x_n}_{y_n'$$

Figure 2. Using the latest "x" to advance "y", explicitly.