

Wye Software Products

Wye Software is a new company specializing in Mathematical and Biological Software. The software is designed to serve as educational aids for undergraduate and graduate students and as well, analysis tools for more seasoned users.

Each product is designed to provide an easy to use interface for computationally difficult tasks. Currently, there are only a few offerings because the company is has just began publishing, however you may want to add this link to your bookmarks so you can keep an eye out for new releases. The mathematical software deals with such topics as [matrix algebra](#), [numerical analysis](#), [linear programming](#), [dynamic systems](#), [graphing and statistics](#). While the biological software deals with [genetics](#) and [ecology](#).

MtrxCalc. A Numerical Matrix Algebra Calculator is currently in version 2.20 and has been *--in development for over four years.*

Short Description.

This new version does not depend on the calculator-button simulation and can be operated without that interface entirely (however, that interface is preserved as an option for it's convenience and ease). Any method applied by depressing a button can also be applied by keyboard. For example pushing the button labeled 'Partial pivot' will apply that method of solution to the system $U*X=R$; while entering `p_pivot(U,R)` from the keyboard will do the same. In addition, using a button 'teaches' the use of the keyboard. That is, in the example above the script '`p_pivot(U,R)`' will be displayed when that button is pushed. Even when used, much less screen space is required now for the button interface since several related methods can be done by choosing the appropriate button face for the one button that applies all those related methods. If one does not like the calculator button interface it can be closed or minimized and the data entry window can be maximized.

MtrxCalc provides a sophisticated parser for the evaluation of expressions such as $A*B$ or $A*(B+C)$ or $inv(A*trans(A))*X$ and etc.. A diary of the latest ten operations is kept and any item from that list can be re-applied at any time, edited or as is. The matrices keep a title of their origins and can be saved to file or printed.

EcoGene. A gene dynamics and ecology analysis application, recently released as version 1.10 -- *over three years in development.*

Short Description.

A program for the analysis of gene dynamics in socially structured populations. EcoGene uses basic demographic and behavioral data, no genetic data is required. The user provides information about the number of breeding groups, sex ratio, dispersal rates and system of mating. With this information, the application calculates the gene correlations, fixation indices, and effective population sizes as they are expected to change over time. Results can be viewed as charts or exported for use in other applications.

Students and teachers will find the program useful because it allows for the examination of how different social structures and dispersal tactics affect important genetic properties, such as differentiation and effective population size. Researchers will benefit from the high degree of precision without the need for genetic data. All users will appreciate the detailed study guide that fully explains the breeding group models of population genetics and contains dozens of useful citations.

Under Development. All the areas listed above have programs that have been in development over three years. Some (two) are just about ready for release, others need only documentation or interface work. So if you have an interest in our potential [keep an eye on our home page](#).

<http://www.augusta.net/dsugg/wyesoft.htm>