

FLORIDA STATE UNIVERSITY
2009 FSU YOUNG SCHOLARS PROGRAM
June 14 – July 25, 2009

Faculty Member: [Thayumanasamy Somasundaram](#)

Departmental Address: [91 Chieftan Way, 414 Kasha Lab, Institute of Molecular Biophysics](#)

Telephone: [644-6448](#) E-mail: tsomasundaram@fsu.edu Website: www.sb.fsu.edu/~soma

I. Brief description in layman's terms of the specific research project for the student(s). List specific activities in which the student(s) will be involved. This information will be sent to the students, who will rank the top six projects that most interest them. **Students rely heavily on your description when selecting their choices, please be as accurate as possible.**

The aim of the project is to crystallize a protein and study the effect of temperature on crystal dimensions. It is an extension of last year's YSP work and will involve the following steps:

- 1) Specific laboratory skills in handling liquids, biological samples and liquid nitrogen.
- 2) Preparation of buffer solutions, protein samples and crystallization plates.
- 3) Setting-up and optical observation of crystal trays with protein samples.
- 4) Flash cooling of crystals using gaseous nitrogen at various temperatures.
- 5) Collecting x-ray diffraction pattern and obtaining crystal dimensions.
- 6) Drawing conclusions based on the observations

Steps 1-3 can be completed during the first three weeks, Steps 4 and 5 can be completed during the 4 and 5th weeks, leaving the last week for final analysis and presentation of the results.

Please note that crystallization procedure for the protein is already known. Flash cooling procedure is a standard technique. The correlation between crystal size at various temperatures and cell dimensions are not fully known and will be the part that the student will research and learn.

II. Please indicate whether computer skills will be useful to the student and if so, what software or language skills would be appropriate.

Proficiency with MS Windows environment with Word, Excel, PowerPoint is sufficient for major part of the project's goal. Basic Linux/UNIX environment skills will be introduced and is helpful in the last part of the project.

III. Many students find working in small groups to be a very positive experience. Please indicate the number of students you would be able to accept into your laboratory. 2

IV. The research will be carried out:

A. Entirely in my laboratory Yes

B. In both laboratory and field _____

Marine environment _____

Fresh water environment _____

Terrestrial environment _____

C. Location of Laboratory KLB 410, 411, 412

D. Under the direction of a grad student or post-doc? _____

(Name: _____)

Return this form to Lance King king@bio.fsu.edu OR Dept. of Biology
Mail code 4295