

ARO-FE Executive Bulletin

August 15 - November 15, 2000



ARO-FE “Invitational Travel” Program is designed to built partnerships with

excellence and relevance. Partial financial support is provided to prominent professors, government and non-government scientists and engineers working in Asia or USA. The technical information and technology assessment, by these people, will enhance the US Army programs and possibly lead to research contracts and/or cooperation.

Highlights (Complete reports on these and others can be found in the ARO-FE web page)

- **Prof. L. Galambos, Electrical Engineering Dept., Stanford University*** attended Photonics Taiwan 2000. Prof. Galambos and Prof. L. Hesselink of Stanford are presently working with Dr. Kenji Kitamura, of the National Institute for Research Inorganic Materials Japan, on “ Periodically Poled LiNbO3 for Photonic and Telecommunication Applications”. Their efforts are designed to improve materials for photonic and communication applications. Their research can result in an important break-through in laser beam shaping, phase conjugation, laser beam amplification , and optical data storage.
Prof. Galambos: “personally, it was a great and rewarding experience to have once again met and talked with several leading researchers in the field of data storage. I would like to believe that this report also made it worthwhile to ARO-FE to have sponsored this trip.
- **Prof. G. Kovacic, Math Dept., Rensselaer Polytechnic Institute** - the Pacific Dynamical Systems Conference*. Prof. Kovacic is presently working with Prof. Nail Akhmediev, Australian National University and Dr. Ildar Gabitov of the Los Alamos National Laboratory on “Four-wave mixing in dispersion-managed optical fiber links”. Their efforts will provide the most advanced and fastest technology for transmitting large quantities of data at long distances. Their approach is to develop a comprehensive mathematical theory to explain and possibly suppress the generation of “ghost” optical pulses. “Ghost” pulses, observed experimentally, may pollute the data stream to the point that the information to be transmitted is lost.
Prof. Kovacic: “..As a ten year veteran of SIAM dynamical systems meetings, it was interesting for me to see the changes and advances that have slowly taken place in the field ... The most striking advances that I have observed are three: 1. The fast growth in volume, scope, and presence of biological applications, 2. Large-scale development and presence of computational methods for dynamical systems, 3. Infinite-dimensional dynamics, especially of partial differential equations, but also non-local equations .. Thank you so much for making it possible for me to go to the conference. I really enjoyed being there, and also meeting you ...”
- **M.D. Junji Wakamiya, National Institute for Minamata Disease, Japan & M.D. Hisashi Usuki, Dept of Surgery, Kagawa Medical University, Japan** attended the IEEE Engineering in Medicine & Biology, World Congress. Dr. Wakamiya and Dr. Usuki are presently working on the usefulness of thermography in neurological diseases. Dr. Wakamiya’s paper is on “Data Processing Method for Standardization of Thermographic Diagnosis” while Dr. Usuki’s is on “Standardization of Thermographic Breast Cancer Detection – Role of Qualitative Findings and Quantitative Findings”
(See ARO-FE web page - Latest Reports - Biological sciences)
Dr. Wakamiya: “I found the necessity of standardization and the method that promoted standardization. The idea served as an incentive to my future study. Thanks for giving an opportunity to publish my paper and to study many things. I received E-mail from four researchers(see sample below). I sent them my papers. On this study, I had many collaborations after the trip to Chicago. Thank you very much.” Dr. Usuki: “In this trip I met many doctors and had much discussion. I learned various kind of thought for the study of detecting cancer. A few of them were same as my thought, but many of them were different from my thought. It was very useful for me and my colleague .. Thank you very much for your kindness concerning our trip to Chicago”

PLEASE NOTE:

* Table of Contents and Abstracts are now available on our Web Page

1. More information on above highlights and other technical material can be obtained from:

- **ARO-FE Web Page:** <http://www.arofe.army.mil/AROindex.htm> or from the ARO Desktop News button.
- **Desktop News** (DTN): <http://www.desktopnews.com/download/AroSetup.exe> An open web and network broadcast platform which displays a tickertape across the top of the computer screen delivering headlines of our activities. It offers an easy and effortless access to the ARO-FE past, present and planned technical activities and it includes hot links to many other Research organizations within DOD. Also, be advised to check into your network security regulations before using” it.
- **Quarterly Report:** The 4th Quarterly Report is located in the ARO-FE web page: its password is “pacific”.
- **Dr. Giuliano D’Andrea:** dandreag@arofe.army.mil, Director ARO-FE.

2. **The Web Page and DTN are new. Your patience and “feedback” are appreciated.**