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NEWSLETTER

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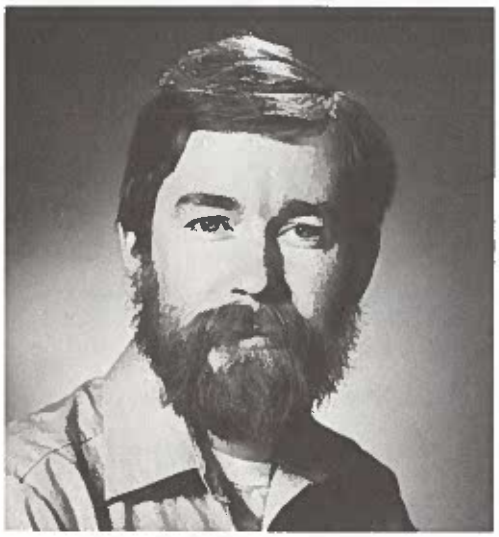

Dr. Daniel J. Cosgrove

Dan Cosgrove of the Biology department Pennsylvania State University, has been awarded a Presidential Young Investigator award. These awards provide cooperative research support for the Nation's most outstanding and promising young science and engineering faculty. With participation of the industrial sector, the awards are intended to improve the capability of universities to respond to the demand for highly qualified scientific and engineering personnel for academic and industrial research.

The President of the United States asked the National Science Foundation initiate a program of awards for cooperative research support for young science and engineering faculty. The combined efforts of the Federal and industrial sectors in sponsoring these awards will provide research support for up to five years for promising young faculty committed to an academic career in fields where needs exist. The objectives of these awards are: to assure the highest quality and relevance in science and engineering education in U.S. colleges and universities; and to relieve shortages of highly qualified faculty in science and engineering fields.

Minimum Presidential Young Investigator Awards consist of $25,000 per year of Federal funds renewable up to five years. However, in accordance with the objective of developing improved links between the academic and industrial sectors, the Foundation will provide up to $37,500 of additional funds on a dollar-for-dollar matching basis to contributions from industrial sources, resulting in total support of up to $100,000.

In addition, nominating institutions are expected to make a significant commitment to support individuals who receive these awards. The institution is responsible for providing full academic year salary for the awardee and arranging for the industrial support. Up to 10 percent of the Foundation funds may be used to defray administrative expenses in lieu of indirect costs.

Dr. Cosgrove's research focuses on the mechanism and control of irreversible cell expansion during plant growth. Since plant cells typically enlarge 50 to 200 fold during maturation, cell expansion is the primary process which controls the size and shape of plant organs. He views the expansive growth of plants as a physical process and has developed special methods for dissecting and measuring the physical components which contribute to plant growth. Growth regulators, light, temperature, water and nutrient availability, and numerous other factors influence the rate and directionality of cell expansion. He is using these agents as probes to investigate (a) what limits plant growth under normal and stressed conditions and (b) how the plant controls its growth. This fundamental knowledge will form the foundation for future attempts to modify or engineer the growth mechanism of plants to suit man's needs.

Specific areas of Dr. Cosgroves research include: a) the role of turgor pressure in plant growth: Water stress can severely inhibit plant growth and crop productivity, apparently by reducing the hydrostatic pressure (turgor pressure) within the growing cells. In his current model of plant cell growth, turgor pressure drives the irreversible expansion of the cell wall. Studies are underway to test this model and to examine in detail the relation between turgor pressure and cell expansion. For these experiments, a new device (the micro-pressure probe) is being used to

make direct measurements of the turgor pressure within single growing cells; b) differential growth in response to gravity. When a plant is turned on its side, the stem grows into a vertical position again by growing faster on the lower side of the stem than on the upper side. This growth response provides a unique opportunity to examine the control of plant growth, in that the response begins fairly quickly, with a lag of only a few minutes in some plants, and cells close to one another give different responses; c) the control of stem growth by light. Light has a pronounced effect on plant growth; it induces young leaves to expand while at the same time suppresses elongation of stems. He has found that blue radiation inhibits stem elongation in young dark-grown seedlings with remarkably fast kinetics: lag times as short as 15 s and responses half-times of 20 to 30 s. From earlier studies he knows that this growth inhibition operates via a stiffening of the cell wall properties. Possible mechanisms for this rapid change in wall properties are being investigated. Possibilities include an increase in the pH of the cell wall free space, or a decrease in the calcium concentration in the wall. In addition to the active projects described above, other interests and potential future projects include: viscoelastic properties of cell walls, and osmo- and turgor-regulation.

Inquiries regarding these awards may be addressed to the Presidential Young Investigator Awards, National Science Foundation, Washington, D.C. 20550, or telephoned inquiries to (202) 357-7536.

From the Education Committee

There will be an ASP education committee sponsored lunch discussion/workshop on July 5th at noon in Philadelphia during the International Congress of Photobiology meeting. A photobiology laboratory manual is being written for publication, perhaps through the auspices of the ASP. Please bring laboratory exercises, reading lists for lectures in photobiology, and other ideas for improving photobiology education to this meeting.

Meetings

1984

Sept 2-11 NATO Advanced Study Institute. Epidemiology and Quantitation of Environmental Risk in Humans from Radiation and Other Agents: Potential and Limitations. Sponsored by NATO Scientific Affairs Division - ENEA - Italian Association for Radiation Biology organized by ENA, San Miniato (Pisa) Italy.
Scientific Content: Methodology, Cancer epidemiology, Biochemical epidemiology, Radiation studies.
Applications should reach Dr. Castellani before June 15, 1984 and should contain a short curriculum vitae, an abstract of the applicant's research interest, a letter of introduction, when appropriate, and any information useful to the Selection Committee. Registration fee is 100 U.S. Dollars. Full board and lodging is 400 U.S. Dollars. A limited number of fellowships will be available. Successful applicants will be notified not later than June 30, 1984.
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1985

Feb 20-22 The 1985 Clinically Oriented Symposium "Therapeutic Photomedicine" of the European Society for Dermatological Research (ESDR) will be held jointly with the Arbeitsgemeinschaft Dermatologische Forschung (ADF), at Baden/Vienna, Austria.
The major part of this symposium consists of lectures given by invited experts but there is also some time alloted for a limited number of free communications.
The main subjects to be covered are: Basics of terminology, photochemistry, molecular and immunological aspects, therapeutic principles and long-term hazards of phototherapy.
The invited guest speakers include: D.M. Carter, E. Christophers, F. Dall'Acqua, R.A. Daynes, T.J. Dougherty, R.L. Edelson, T.B. Fitzpatrick, P.D. Forbes, M.W. Greaves, E.G. Jung, M.L. Kripke, J.A. Parrish, G. Plewig, J. van der Leun, K. Wolff.
For information: Herbert Honigsmann, M.D., c/o Vienna Academy of Postgraduate Medical Education, Alser Strasse 4, A-1090 Vienna, Austria.

Postdoctoral Position

Postdoctoral position available at the Division of Biological and Medical Research, Argonne National Laboratory, near Chicago, Illinois, to study the biological effects of reactive oxygen species generated by solar ultraviolet radiations. Experience in the chemistry of reactive oxygen species will be an asset. The incumbent will study mutagenesis and DNA modifications caused by the reactive species of oxygen. The position is initially for one year, renewable for up to two more years. Send applications, curriculum vitae and the names of two referees to Dr. Meyrick J. Peak, Photobiology Group, Division of Biological and Medical Research, Argonne National Laboratory, Argonne, IL 60439. Drs. Chris S. Foote (Chemistry Department, U.C.L.A.) and Norman I. Krinsky (Department of Biochemistry and Pharmacology, Tufts University, School of Medicine) are collaborators in this project.

NINTH INTERNATIONAL CONGRESS ON PHOTOBIOLOGY

By now all of you should have received at least one copy of the complete program outline for the upcoming Congress. This was mailed in a large white envelope and also contained information on Delta and United Airlines (the co-official airlines for the Congress), information on the Works-in-Progress Poster Session (also contained in the May Newsletter), and another registration form for the Congress. Please let the Secretariat know if you have not received the above mentioned mailing. They were mailed via first class mail to the US, Canadian and Mexican Members and via Air Mail to the other foreign Members.

The abstract supplements were scheduled to be mailed by Pergamon Press on 17 May. Please remember that this will look the same as a regular issue of the journal, PHOTOCHEMISTRY AND PHOTOBIOLOGY. It has been sent to all member subscribers to P&P. Student Members who do not subscribe to the Journal and will be attending the Congress will be given a copy upon arrival.

One of the Minisymposia that will be held during the course of the Congress is "Water Splitting Reaction in Photosynthesis", organized by Professor Peter H. Homann in the Institute of Molecular Biophysics, The Florida State University, Tallahassee. This Minisymposium is scheduled for 10:15 am, Wednesday, 4 July. The schedule is as follows:

Chairman's Remarks -- Peter H. Homann

Polypeptide Components of the Partition Regions of the Chloroplast Lamellar System. -- Birger L. Møller, Carlsberg Laboratories (Denmark)

Acting and Resting Conformations of the Photosynthetic Oxygen Evolving Complex. -- Gary W. Brudvig, Yale University

The Role of the 33 and 24 kD Proteins in Photosynthetic Oxygen Evolution. -- Taka-Aki Ono, Institute of Physical and Chemical Research (Japan)

Studies on the Photoactivation of Oxygen Evolution. -- Franklin E. Callahan, University of Kentucky

Cofactors in Oxygen Evolution. -- Seikichi Izawa, Wayne State University

General Discussion

Please remember that there is still time to submit a title for the Thursday evening, 5 July, Works-in-Progress Poster Session. The deadline for submission of titles is Friday, 15 June. Abstracts are not required, but should be a part of the poster presentation. If there is not time to mail the title to the Secretariat to be received by 15 June, call in your title to (703)790-1745.

The schedule for the Congress is a very full one. We feel that everyone will appreciate the free afternoon and evening on Wednesday, 4 July. The 4th of July can be rather exciting in Philadelphia, and there are several optional activities available for that free time. Please review the social program that was included with the Final Announcement Brochure and sign up with Showcase Associates for those activities in which you wish to participate.

CONGRESSIONAL SCIENCE FELLOW, 1984-1985

The 1984-1985 Congressional Science Fellowship has been awarded to Dr. Maria C. Corea-Freire of the Department of Biochemistry at the University of Tennessee, Knoxville. Dr. Correa-Freire has her PhD in Biophysics from the University of Virginia, Charlottesville. She has published a number of papers on membrane biophysics and has been involved in the development of Herpes Simplex Virus and glycoprotein carriers to elicit cell-mediated immune responses in vivo. Dr. Correa-Freire is currently working on the development of fusion techniques for delivery of specific molecules to the cell cytoplasm. The ASP is delighted to have Dr. Correa-Freire as our 1984-1985 Congressional Science Fellow.

1984 ELECTION

Enclosed with this Newsletter are the Ballot Information Sheet and the Offical Ballot Card for the 1984 Election. Please review the Ballot Information Sheet immediately, mark your Ballot Card, affix postage and mail. The Card is self-addressed for your convenience. PLEASE! If you mail your ballot in an envelope, DO NOT mail anything else with it. DO NOT mail your ballot in your dues envelope if you are just now remitting your 1984 dues. In addition, if the ballot is mailed in an envelope, mark the envelope BALLOT ENCLOSED. The DEADLINE for receipt of ballots by the McLean Secretariat is JUNE 28, 1984. PLEASE VOTE NOW.

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