

SEAC NEWSLETTER

Volume 5, No. 3, July 1988

The Society for Electroanalytical Chemistry

President's Message

I recently returned from two European and one Canadian trip, including a week at the Analytica exhibition in Munich. For those who have not been there, Analytica is basically equivalent to the exhibition at the Pittsburgh Conference (without the extensive technical program) or the Scientific Instrument Show (SIS) in Japan each October. I was **surprised** at how little electrochemistry I saw at this German exhibition and the Chemical Congress of North America (Toronto). Metrohm, EG&G, and BAS all exhibited at Analytica, but this was the only voltammetry equipment I saw. Among these, only EG&G and BAS gave it any real attention which is pretty much the same situation in the U.S. This surprised me, because I've been impressed that Europeans **used** electroanalytical techniques a lot more than Americans. Perhaps the situation has changed and electroanalysis has slipped in Europe over the last 10-15 years as it did earlier in the U.S. It would be interesting to have a European perspective on this, if we can find one. The spectroscopists and chromatographers are overwhelming us everywhere.

Perhaps the truth is that finite current electrochemical techniques are most virtuous for studying electrochemistry (as a science) and **redox** chemistry in general. Characterizing properties of materials (thermodynamics and rates of reaction) is our real strength. For determination of composition, **electroanalytical** chemistry is currently a very weak cousin to spectroscopy. Nevertheless, it's nice to be a member of such an exclusive group. This year Prof. Fred **Anson** was elected to the National Academy of Sciences. This is a very substantial honor both for Fred and for the rest of us. I know he was first on the list for alphabetical reasons, but this SEAC member and Reilley Award winner also earned this place! Quality vs. quantity!

There were four excellent electrochemical programs at the North American Chemical Congress. The sessions on "Photochemical and Electrochemical Surface Science: Bioelectrochemistry" which Ted Kuwana and Fred Hawkrige stimulated and the "History of Electrochemistry" sessions assembled by John Stock were very nicely done. There were lots of new things talked about with regard to electrochemical biosensors and chemically modified surfaces (for which we are finally getting some molecular details). The history session went very well. I, for one, was also very taken by Petr **Zuman's** perspective on the development of polarography and (especially) the people involved in getting an enormous amount of science done in spite of two World Wars **trying** to interfere.

The Awards Dinner at Toronto recognized four people who have been contributors to electrochemistry and are well known among SEAC members. They are deserving of our warm congratulations.

Garvan Medal Sponsored By Olin Corporation



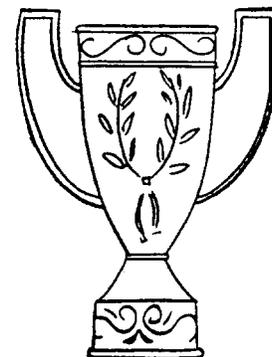
Marye Anne Fox
University Of Texas, Austin

... for her very original and significant contributions to organic photochemistry and electrochemistry, in particular photocatalysis of organic reactions by wide-band semiconductors, chemically modified photoelectrodes, and the photochemistry of organic anions.

American Chemical Society Award In Inorganic Chemistry Sponsored By Monsanto Company

Mark S. Wrighton
Massachusetts Institute of Technology

... for uncovering fundamental principles in inorganic photochemistry and for extending inorganic chemistry into electronics and materials science through creative studies of functionalized electrodes, solid-state catalysts, and microelectrochemical devices.



**The Peter Debye Award In
Physical Chemistry**
Sponsored By E. I. Dupont De
Nemours & Company

Rudolph A. Marcus
California Institute of Technology

... for the development of insightful concepts, viewpoints, and relations which are central to the quantitative understanding of the rates of a broad variety of chemical reactions.

**American Chemical Society
Award In The Chemistry Of
Contemporary Technological
Problems**

Sponsored By Mobay Corporation

John O'M. Bockris
Texas A & M University

... *in* recognition of his numerous contributions to the science and technology of electrochemistry, as well as his visionary work on alternatives to the present fossil fuel system.

It was also of note to learn that Professor William Heineman has been recognized as a Distinguished Research Professor at the University of Cincinnati. Bill was the first President of SEAC and is still active in the organization. Congratulations to Bill, Fred, **Marye** Anne, Mark, Rudy and John. It was a good season for electrochemists.

Peter T. Kissinger

P.S. I just learned that Prof. Ted Kuwana will receive the 1989 Reilley Award from SEAC. A summary of Ted's accomplishments just made it as this issue went to press.



EDITORIAL

I'm beginning to wonder if the last SEAC Newsletter ever got sent out. Maybe the shipment was highjacked as it left the printers (but who would want it?). Perhaps the printers inadvertently used disappearing ink. That would explain it! But no . . . I received my copy in good condition. I'm really at a loss to explain the lack of response to the last Newsletter. It couldn't be apathy; everyone knows how enthusiastic **electroanalysts** are. It must be spring fever. At least I hope it was spring fever.

Now we're into summer; classes are over, vacations are starting, and we all can sit back and think profound thoughts. Now is the time to send us some of your ideas, problems, news, and anything else that might be the least hit interesting to your friends and colleagues. Also please dig out the **last** Newsletter (which you of course save) and respond to some of the burning questions and issues I raised. For example, **are** the streets in polarographer's heaven really paved in cadmium? Or, are fruit flies a serious interference to **Garry** Rechnitz' bananatrode? I mean, really folks, these are mind-boggling questions that deserve some thought.

Actually, some of the features for which I would like to get contributions include: News & Views (e.g., letters to the editor), Member Notes (awards, job changes, and the like), Meeting Notices & Summaries, Book Reviews, Employment Opportunities, Articles (biographies, scientific advances, etc.), and Electrivia (**purzies**, cartoons, unexplained phenomena, etc.). For this last item, I plan for the next issue to report some unusual organometal cyclic voltammetric behavior that I observed some years ago for which I have a couple of theories, but I would like to get some rational ideas from the rest of you. Maybe some of you have even observed the same behavior yourselves. Likewise, if any of you have observed some unusual electrochemical behavior which you might be reticent to publish in a reputable journal, send it to me; the more exotic the better.

Also, don't forget to give me some feedback on the question of the Newsletter name and/or logo change. Does anyone like or dislike the proposed "**ElectroAnalytical** Communications"? Or the 3-D chronovoltammogram logo? Any other suggestions?

Finally, on a more somber note, by now many of you have heard about the tragic death of Dave Mohilner in an automobile accident. His obituary appears elsewhere in this issue. He will be missed by his friends and colleagues.

CONGRATULATIONS, FRED

Once again, one of the greats of electroanalytical chemistry stands head and shoulders above the crowd: at least physically, if not intellectually. Professor Fred C. **Anson** of the California Institute of Technology has recently been elected to that most prestigious of scientific bodies in the U.S., the National Academy of Sciences. He now joins the other giants in the field of electroanalytical science, notably A. J. Bard and the late C. N. Reilley, who have been recognized for their important contributions to this field and to U.S. science in general. SEAC takes pride in the fact that we recognized Fred's **ac-**

complishments, even before the NAS, with the presentation of the Reilley Award in 1986.

I would like to take this opportunity to share with you a condensed overview of Fred's brilliant career. Despite his lack of scientific credentials, having attended **Caltech** and Harvard, Fred overcame this early handicap to return to his alma mater (they, out of pity, were the only ones who would offer him an instructor's job after his academic performance at Harvard) where he distinguished himself as a leading tennis player, raconteur and WETS organizer. Somehow along the way, he attracted (presumably with his colorful bow ties) an outstanding group of grad students and postdocs who established him as a power **in** electroanalytical chemistry.

Let me not bore you with a litany of Fred's scientific achievements, and boring they are. Rather I shall briefly mention but one of his major contributions to this field: the invention of the **Anson Plot** to go along with the little-used technique of **clronocoulometry**. Although lost in the **mists of time**, it was rumored that he made this serendipitous discovery one day while cleaning up the lab (his usual job after the scientists finished for the day) and incorrectly connected **the** wires to a **potentiostat**. His unique plotting approach led to the successful interpretation of otherwise inscrutable and worthless data. This technique, now used solely by the few cognoscenti who can fathom its deeper meanings, propelled him to the forefront of his field; especially since little else was going on at the time.

These little known historical facts are but a small part of Fred's distinguished career but serve to demonstrate to the younger electroanalytical researchers that anyone can make it to the top; scientific ability is not necessarily a prerequisite. In hindsight, however, it boggles the mind to think what Fred might have accomplished if he had spent his career at a major scientific institution, such as MIT, instead of **Caltech**.

Finally, let me close on a more serious note by saying that the NAS has done itself proud by selecting Fred for this extremely high honor, and I know that **all** of you join me in congratulating him. Also, I am sure that you will all agree that it **couldn't** happen to a nicer guy. Keep up the good work, Fred.

Dick Durst

Election Results

The results of **the 1987(8)** election of SEAC Officers are as follows:

For President-Elect:	Barry Miller	73
	Others	0
For Secretary:	Joseph T. Maloy	72
	"Anybody Else" I	
For Treasurer:	Franklin A. Schultz	73
	Others	0

The Secretary did not vote because he apparently misplaced his ballot; the name "Anybody Else" on one ballot appears to be in his wife's handwriting. Possible voter fraud is being investigated.

Temporary Change of Address:

Please be advised that I have accepted an appointment as a National Research Council Senior Associate at the Frank J. Seiler Research Laboratory at the United States Air Force Academy in Colorado Springs, Colorado, for the summer of 1988. All professional correspondence during the months of June, July, and August should be addressed to me as follows:

Joseph T. Maloy
FJSRL/NC
USAF Academy
Colorado Springs, CO 80840-6528

My telephone number is: (719) 472-2655

Please note that all mail sent to me at this address will probably be opened by Air Force postal inspectors. Thus, mail of a personal nature and personal calls should be directed to my home in West Orange until such time as I am able to provide a civilian address and telephone number in Colorado Springs.

All first class mail sent to my home or to **Seton Hall** University should be forwarded to me, but you should be aware that errors do occur even in the best mail forwarding systems. If I do not respond within a reasonable time period, please try again. I thank you for your patience.

(I don't know about the rest of you, but I'm very curious as to the nature of these personal messages Joe refers to above - Editor.)

GET WELL, ROGER

At the **North American** Chemical Congress in Toronto, I ran into Herb **Laitinen** who informed me that Roger Bates, Mr. **pH**, had **recently** undergone double-bypass heart surgery. When I returned to NBS a couple of days later, I called Roger at home and had a very pleasant (as usual) chat with him. You will be happy to hear that he is doing very well and, if I know Roger, he's probably already out on the tennis court doing battle with some unsuspecting victim (as I used to be). I'm sure you join me in wishing Roger a very speedy and complete recovery.



Reilley Award Endowment Fund

Our thanks to Jerry P. Koontz (Digital Technology, Inc., Chapel Hill, NC) for his generous contribution.

Welcome To Our Newest Members

Andrew Palus, EG&G PARC (3/11/88)
Jennifer Chien, Penn State Univ. (3/20/88)
Robert **Ensmann**, **Ensmann** Instrumentation (4/20/88)
Marie-Josée Rocheleau, McGill Univ. (4/20/88)
Todeusz Hepel, **Clarkson** Univ. (4/20/88)
Lo **Gorton**, Univ. of Lund (4/21/88)
Michael Freund, Univ. of Florida (4/26/88)
Milton J. Allen, Virginia Commonwealth Univ. (4/26/88)
Marjorie Nicholson, Texas A&M Univ. (4/26/88)
Del Lawson, Texas A&M Univ. (4/27/88)
Janet W. **Sorrels**, Ohio Univ. (4/27/88)
Xiaoling Yuan, Virginia Commonwealth Univ. (4/29/88)
Teresa Golden, New Mexico State Univ. (4/30/88)
Yan Xu, Univ. of Cincinnati (5/2/88)
George **Volpe**, **Seton** Hall Univ. (5/3/88)
Marek Wojciechowski, Univ. of Maryland-Baltimore County (5/3/88)
Junting Lei, Texas A&M Univ. (5/4/88)
Eileen Buckley, National Inst. for Higher Educ. - Dublin (5/5/88)
David Gosser, City College, CUNY (5/10/88)
Matthew Todd, Northwestern Univ. (5/20/88)

As you can see, our Society is continuing to attract an increasing number of international members. Let's keep it up!

MEETINGS

I've just returned from the first Gordon Research Conference on Bioanalytical Sensors. It was a stimulating week of talks by leading experts and many interesting informal discussions. While the conference was quite broad in its topics, electroanalytical chemistry got more than its fair share of the time (to the consternation of some of the more optically oriented types). Several **SEACers** took a very active role in the conference including my vice-chairman, Ted Kuwana, and Yoshio Umezawa (Ion-Channel Sensors), Mark Wightman (In-Vivo Determination of Neurotransmitters), Bob Kobos (**Potentiometric** Biosensing Systems), Mark Meyerhoff (Biosensing with Polymeric Membrane Electrodes), Anna Brajter-Toth (Strategies for Amperometric Detection of Biomolecules), and Mark Arnold (Recent Advances in the Development of Biocatalyst-Based Fiber Optic Biosensing Probes; he also tossed in a discussion of a new ISE for phosphate). Other **non-SEAC** electrochemical speakers included Masuo Aizawa, John Albery, **Yinon** Degani, E. Pungor, and J. Janata.

By all reports, the conference was highly successful (although I may be excused for being slightly biased). The conference will probably continue on an **18-month** cycle, **alternat-**

David M. Mohilner, Professor Emeritus of Chemistry at Colorado State University, passed away as a result of an automobile accident near Gould, Colorado, on June 2, 1988. David is survived by his mother, who resides in Wichita, Kansas.

David was born January 3, 1930, in Wichita, Kansas, where he grew up. He received his B.S. and Ph.D. degrees from **the** University of Kansas, Lawrence, Kansas, in 1955 and 1961 respectively. His Doctoral work was conducted under the joint supervision of Ralph Adams and W. J. Argersinger, Jr. He was a Postdoctoral Research Associate **from** 1960 to 1962 with Paul Delahay while Paul was still at LSU and with Norman Hackerman at the University of Texas from 1964 to 1965. Between his two postdocs, Dave was an Assistant Professor at the University of Pittsburgh. In 1965 David joined the faculty at Colorado State where he remained until his retirement in 1987.

David's scientific contributions were many. His numerous publications in the area of double layer phenomena still stand as major, internationally recognized works in the field. The chapter **in** Al Bard's series on Electroanalytical chemistry that Dave authored remains as a definitive reference source on the double layer. David's scientific presence and his inimitable personality will be missed by us all. No WETS party will ever quite be the same.

The Chemistry Department at Colorado State University has established a memorial scholarship fund in David's name. Anyone wishing to make a contribution to this fund should send a check made out to "CSU Foundation, Mohilner Fund" to the Department of Chemistry, CSU, Ft. Collins, CO 80523, attention Pat curry.

ing between the east and west coasts. I am sure that Ted Kuwana would like to hear from anyone with suggestions for the next conference which he will chair. Again, we will try to include a diversity of techniques reflecting the latest developments in biosensing. John Peterson (MH) was elected **vice-chairman** for the next meeting.

As with most Gordon Conferences, many of us came away **with** new insights and ideas. In fact, Ted told me on the Tuesday of the conference that he wanted to get right back to the lab so that he could follow up on some ideas. I had to let the air out of his tires to keep him there for the remainder of the week. I hope we'll see many more of you at the next conference.

Dick Durst

The following notice was received from Daniel Thevenot:

This is to inform you of the Third National Meeting of the French Group of Bioelectrochemistry (G. F. B.) to be held in Aussois (Savoie, France) from October 2 to 5, 1988.

Three main topics will be presented with invited speakers during the 3 days of meeting:

1. Electrochemical Biosensors: from Theory to Application,
2. Potential Dependent Membrane Transport,
3. Electron transfer mechanisms between and within biological molecules, either isolated or integrated in a membrane.

Voluntary contributions are accepted in **all** fields of bioelectrochemistry: they will be presented as posters **which** will be discussed during round-table sessions. Most presentations and discussions will be held in French.

For registration or detailed inquiries, one may contact before July 8, 1988, either:

* Dr. **Jean-Antoine** REYNAUD, G.F.B. President
Centre de Biologie Moleculaire - C.N.R.S. -
I, Avenue de la Recherche Scientifique
F-45 071 - ORLEANS CEDEX
Tel: (33)-38.63.10.04 ext 237).

or:

* Dr. Daniel THEVENOT, G.F.B. General Secretary
Laboratoire de Bioelectrochimie et d'Analyse du
Milieu (L.A.B.A.M.) U.F.R. de Sciences et de Technologies
Universite Paris Val-de-Mame
F-940210-CRETEIL CEDEX -
Tel: (33)-1.48.98.91.44 ext. 24.24
or (33)-1.48.98.13.94 (direct line)
or EARN-BITNET: ULBAOOO at FRORS 12.

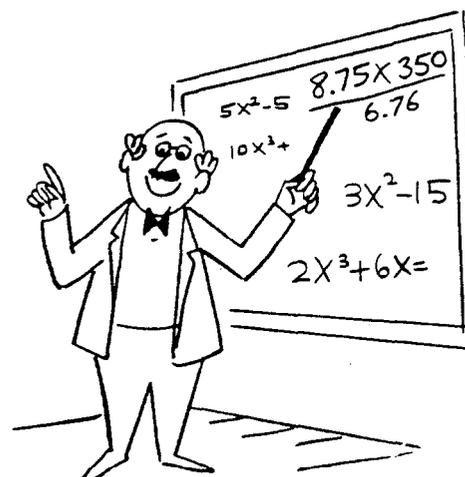
(One of the invited speakers, George Wilson (Universite du Kansas) will speak on "Strategies de developpement de **biocap-**teurs electrochimiques." Are you giving your talk in French, George?)

September 5-10, 1988

39th International Society of Electrochemistry Meeting to be held at the University of Strathclyde, Scotland. Sessions on electrochemical dynamics, spectroelectrochemistry, microelectrodes, new designs for electrochemical processes, and charge transfer at non-metallic interfaces.

Further information from:

Professor M. L. **Hitchman**
Chemistry Department
Strathclyde University
Cathedral Street
GLASGOW, G11XL Scotland, U.K.



September 6-9, 1988

11th International Subcellular Methodology Forum (Study of Cellular Roles of Calcium) to be held at the University of Surrey, Guildford.

Further information from:

Guildford Academic Associates,
72, The Chase
GUILDFORD, GU2 5UL, U.K.

October 9-13, 1988

Fifth Scientific Session on Ion-Selective Electrodes to be held at **Matrafured**, Hungary. The Session will be devoted to theory of **ISEs**, new sensor materials and construction modes, and applications with emphasis on biochemical aspects.

Further information from:

Organizing Committee of the 5th Scientific Session on **ISEs**
Institute for General and Analytical Chemistry,
Technical University,
H-1502 BUDAPEST
Gellert ter 4 Hungary

November 2-4, 1988

EUROSENSORS II: 4th Symposium on Sensors and Actuators to be held at the University of Twente, The Netherlands.

Further information from:

EIJROSENSORS II
c/o Congress Bureau Twente
PO Box 613
7500 AP ENSCHEDE
The Netherlands

April 1-4, 1989

7th International Symposium on Electroanalysis in Biochemical, Environmental and Industrial Sciences to be held at the University of Technology, Loughborough, **Leicestershire**, England. In addition to papers on the main theme areas relating to the title, papers on the Electroanalysis of Natural Waters will be especially welcome, and for which Dr. C.M.G. van den Berg will deliver a plenary lecture.

Further information from:

Electroanalysis Conference
Chemistry Department
Loughborough University of Technology
LOUGHBOROUGH
Leics., LE113TU, U.K.

June 25-30, 1989

EUROSENSORS III and 5th International Conference on Sensors and Actuators to be held in Montreaux, Switzerland.

Further information from:

EUROSENSORS III (TRANSDUCERS '89)
COMET S.A. (Conference Organizers in Medicine,
Science and Technology)
PO Box 415 1001 LAUSANNE 1,
Switzerland

New Book

PRINCIPLES OF ELECTROCHEMISTRY, Jiri Koryta and Jiri Dvorak, xi + 447 pp., John Wiley & Sons, 605 Third Avenue, NY 10016, 1987, \$95. Dennis Evans provided a very positive review in *Analytical Chemistry* 60, 526A (1988) in which he stated, "In short, this is a good text for introducing the fundamentals of electrochemistry." It is apparently written at the level of advanced undergraduate and beginning graduate students.



EMPLOYMENT OPPORTUNITIES

The Center for Bioanalytical Research, University of Kansas, has openings for postdoctoral researchers in areas related to biospecific reagents, bioseparations and instrumentation. Ph.D. in analytical chemistry, pharmaceutical chemistry, biochemistry or closely related field required. Experience in HPLC, spectroscopy, analytical instrumentation and/or electrochemistry desirable with background in biochemistry helpful. **\$18,000-22,000/year**. Applicants should send vitae and three letters of recommendation to Dr. Theodore Kuwana, CBAR, 2095 Constant Avenue, Lawrence, KS 66046. AA/EO employer.

University of Oxford, Physical Chemistry Laboratory, **Photoelectrochemistry** of Ion Radicals. Applications are invited for a 2 year SERC funded postdoctoral research fellowship commencing on or before 1 October 1988. The work involves the **discovery** of new chemistry associated with the photochemistry of **electrogenerated** ion radicals in solution and the development of methodology (electrochemical, ESR) for studying such reactions. The work will be carried out in Oxford with collaboration from Dr. D. Bethell (University of Liverpool) who will provide a synthetic and physical-organic input into the project. Experience in electrochemistry or in the use of lasers might be an advantage. An appointment will be made on the IA scale within the range of 9865 to 15720 pounds and applicants should send a CV and arrange for two letters of recommendation to be forwarded to: Dr. R.G. Compton, Physical Chemistry Laboratory, Oxford University, South Parks Road, OXFORD OX13QZ, U.K. An equal opportunity employer.

Innovative research in advanced battery, fuel cell and electrolytic areas. Challenging opportunity in small research company. Send resume to: Eltron Research, Inc., 4260 Westbrook Drive, Aurora, IL 60504.

1989 Reilley Award Announced

Theodore Kuwana of the University of Kansas is the sixth recipient of the C.N. Reilley Award in Electroanalytical Chemistry. Professor Kuwana is being recognized for his extensive achievements in developing the fields of spectroelectrochemistry, bioelectroanalytical chemistry and chemically modified electrodes.

Ted Kuwana was born in Idaho Falls, Idaho, in 1931. He received a B.S. degree in Chemistry from Antioch College in 1959, an M.S. in Chemistry from Cornell University in 1956 and his Ph.D. in 1959 from the University of Kansas under the direction of Professor Ralph N. Adams (2nd Reilley Awardee). Following a postdoctoral with Professor Fred C. Anson (3rd Reilley Awardee) at California Institute of Technology, he joined the faculty at the University of California at Riverside as a Visiting Assistant Professor in 1960. He moved to Case

Western Reserve **University** in 1965 as an Associate Professor and was promoted to Professor in 1968. In 1971 Professor Kuwana moved to the Ohio State University as Professor and he returned to the University of Kansas as Regents Distinguished Professor of Pharmaceutical Chemistry and Chemistry and as the Director of the Center for Bioanalytical Research (CBAR) in 1986.

Professor Kuwana's research has included the development and application of the theory, methods and instrumentation for the field of **spectroelectrochemistry**. He has also made fundamental contributions to research areas involving bioelectroanalytical chemistry, chemically modified electrodes and electrocatalysis. He has published over 150 research papers, received two patents and edited a three volume set "Physical Methods in Chemical Analysis."

Professor Kuwana received the 1985 Distinguished Scholars Award of The Ohio State University, a Professional Leave from the Ohio State Special Programs for research and study in Japan in 1984-85, a Japan Society for the Promotion of Science Visiting Professorship at the Pharmaceutical Institute of Tohoku University, Sendai, Japan, in 1977, and an NM Special Postdoctoral Fellowship for study at the Institute for Enzyme Research at the University of Wisconsin in 1970-71. He is a member of the Advisory Committee for the Chemistry Division of the National Science Foundation (1986-89), was an Associate Editor of **Analytical Chemistry** (1985-86) and he has been on the editorial boards of Accounts of **Chemical Research** (1982-86) and **Analytical Sciences** (1985-87), the International Journal of the Japan Society for Analytical Chemistry. He has served on several NSF and NIH review panels.

Go to
Beijing,
Climb the
Great Wall



The third Beijing Conference and Exhibition on **Instrumental Analysis (BCEIA)** will be held in October, 1989, in Beijing. Its objectives are to promote academic exchanges on instrumental analysis and friendship among scientists of various countries as well as to promote technical and trade cooperation between Chinese and foreign companies.

The Conference will be held on October 27-30, 1989, at Beijing Science Hall. Symposia in the fields of electron microscopy, mass spectrometry, spectroscopy, chromatography, radio and microwave spectroscopy and **electroanalytical chemistry** will be held separately.

BIOSENSORS IN THE BRAIN EXPLAIN WHY SOME PEOPLE LIKE ELECTROCHEMISTRY

1st CALL FOR PAPERS

The First

International Symposium On Microdialysis

And Allied Analytical Techniques

May 17-19, 1989
Indianapolis, Indiana USA

organized by:

BAS / *Carnegie Medicin*

(West Lafayette, Indiana and Stockholm Sweden)

- New concepts and instrumentation for microdialysis
- Determinations of neurochemicals, pharmaceuticals and metabolites in dialysates, perfusates and other samples
- Studies in brain, fat, muscle, blood and other sites
- Combination techniques (e.g. *in vivo* electrochemistry with microdialysis, stimulation/sampling experiments, etc.
- Microdialysis as a tool in pharmacological research
- High sensitivity detection of analytes in dialysates
- Microdialysis in plant tissue and other materials
- Protocols for the awake animal

DEADLINE FOR TITLES

Titles for papers (25 minute presentation) or posters **are** welcomed and should be submitted not later than November 30, 1988 to the attention of Prof. Urban Ungerstedt, c/o **BAS/ Carnegie Medicin**, 2701 Kent Avenue, W. Lafayette, IN 47906 USA.

INFORMATION

A brochure will be available mid-summer of 1988. Please request a copy by writing to: T. Ashman, ISMAAT, P.O. Box 2206, West Lafayette, IN 47906