

## The Crucible

http://membership.acs.org/P/Pit

Volume: LXXXVII No. 6

February 2002

## PITTSBURGH SECTION 2002 ELECTION RESULTS

The Tellers Committee of the Pittsburgh Section of the American Chemical Society announces the winners of the 2002 Pittsburgh Section election. The Section and its members extend congratulations and best wishes for a successful and productive term in office.

Chair-Elect: Secretary-Elect: Treasurer-Elect:

Director:

Councilors:

Alt. Councilor:

Myron Shaffer

Neil Donahue

Tabitha H. Riggio

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Jennifer Weinberg Theodore Weismann

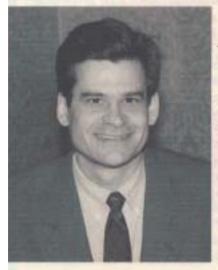
Paul E. Beck

great to have in our area and we should be proud of the achievements of these committees. The Young Chemist Committee and the re-establishment of the Environmental Subgroup are new for 2002. Look for our program announcements later this year. This year is also the primary planning year for the ACS Regional meeting to be held in Pittsburgh during 2003. The Pittsburgh Section and the city have much to offer this meeting, which I'm sure, will be an overwhelming success.

We again look forward to working with the Spectroscopy Society of Pittsburgh and the Society for Analytical Chemists of Pittsburgh. We all share common interests, goals and concerns. The family oriented

Continued on page 4

## A Message from the Chair



belated Happy New Year! I am honored to be a part of the ACS Executive committee As your new for 2002. ACS Pittsburgh Section Chair, I want to thank you for the opportunity to serve you and the Western Pennsylvania region. Please join me in congratulating those individuals who were elected to serve in positions this year and also in thanking those who were nominated and are willing to

I feel deeply that at some early point in our lives we should all give back to society; to be active in our local ACS Section is a great way to do so! I encourage you all to participate in a local ACS subgroup. The many subgroups organized outstanding programs in 2001 and those committees are already planning more activities for this year. The Chemistry Olympics and National Chemistry Week programs are two excellent examples of how members can reach out and contribute to educating our local youth. These events were

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## SOCIETY FOR AWALYTICAL CHEWISTS OF PITTSBURGH

February Meeting

Monday, February 4, 2002

Duquesne University
Maurice Falk Hall

Social Hour 5:30 p.m. / Student Affiliates Meeting - Duquesne Room (Student Union) 5:45 p.m.
Dinner - Student Union, City View Cafe (6th Floor) 6:30 p.m.
Business Meeting 7:40 p.m. / Technical Presentation 8:00 p.m.

# "The Principles & Development of Electrogenerated Chemiluminescent-Based Analytical Methods"

Dr. Allen J. Bard

2001 Pittsburgh Analytical Chemistry Awardee The University of Texas at Austin

lectrogenerated chemiluminescence (ECL) has been investigated since 1964 as a method of producing light at an electrode contained in an electrochemical cell. In a sense, ECL represents a marriage between electrochemical and spectroscopic methods. A brief review of the principles and history of ECL will be followed by a discussion of its many applications to a variety of analyses (e.g., immunoassay, DNA probes) and its potential use in near field scanning optical microscopy (NSOM).

A llen J. Bard received his early education in the public schools of New York City and attended the City College of New York, receiving his B.S., summa cum laude in 1955. He did his graduate work at Harvard University with J.J. Lingane, earning his M.A. in 1956 and Ph.D. in 1958 in electroanalytical chemistry. He joined the chemistry staff at the University of Texas at Austin where he is Professor of Chemistry (1967-present), holding the Jack S. Posey Professorship (1980-1982), the Norman Hackerman Professorship (1982-1985), and currently

the Normal Hackerman/Welch Regents Chair in Chemistry (1985 - present). Bard has served as a consultant to several laboratories, including E.I. DuPont, Southwestern Analyticals, and Hyperion.

Bard's research interests have been in the application of electrochemical methods to the study of chemical problems and include investigations in electrochemistry, electrogenerated chemiluminescence, and electroanalytical chemistry. He is also editor-in-chief of the Journal of the American Chemical Society.

Professor Bard has published three books: Electrochemical Methods, with L. Faulkner, Integrated Chemical Systems, and Chemical Equilibrium. He has published more than 700 papers and chapters while editing the series Electroanalytical Chemistry (21 volumes) and the Encyclopedia of the Electrochemistry of the Elements (16 volumes) and co-editing the monograph, Standard Potentials in Aqueous Solution.

He is married and the father of two children.

Dinner Reservation: Please call Ed and Virginia Naylor at 412/831-9068 or by email to: naylor@pittcon.org by, Thursday, January 31, 2002 to make your dinner reservations. Do not Call the SACP office to Make Dinner Reservations. Dinner will cost \$8.00 (\$4.00 for Student Affiliates). If you have dietary restrictions, please let Ed or Ginny know. Also, should you wish to be placed on a permanent dinner attendance list, leave a message for Ed or Ginny at the above number.

Parking Instructions: Duquesne University Parking Garage entrance is on Forbes Ave. Upon entering the garage, receive a parking ticket and drive to upper floors. Pick up a sticker at the dinner/meeting. Contact Mitchell Johnson at Duquesne University if any difficulties arise.

## SPECTROSCOPY SOCIETY OF PITTSBURGH

## February Meeting

Wednesday, February 20, 2002

## Duquesne University Maurice Falk Hall

| Dinner - Duquesne Room | 6:00 | p.m. |
|------------------------|------|------|
| Business Meeting       | 8:00 | p.m. |
| Speaker's Presentation | 8:15 | p.m. |

## "Chemical Sensing with Miniature High-Finesse Optical Resonators: Evanescent Wave Cavity Ring-Down Spectroscopy"

Andrew Pipino

In recent years, cavity ring-down spectroscopy (CRDS) has emerged as a powerful and simple approach to optical absorption metrology of gas phase species. CRDS employs the photon decay or "ring-down" time of a high-finesse optical cavity as the absorption-sensitive observable. Minimum detectable absorptions of < 1 ppm are routinely achieved by CRDS from the ultraviolet to the infrared. Evanescent wave CRDS is being developed to extend CRDS to the spectroscopy of surface-bound and liquid phase species, potentially providing a new chemical sensing technology and a basic research tool for probing insulator surfaces that are difficult to probe by other means. EW-CRDS utilizes miniature optical resonators that are fabricated from ultra-low-loss optical materials, where one or more total-internal-reflection surfaces are integral to the resonator design. The concomitant evanescent wave then probes the presence of an absorbing species at the TIR

surface. Both the spectral and polarization-dependence of absorption can be determined. Prototype results and current efforts will be discussed.

r. Pipino is a staff scientist within the Chemical Science and Technology Laboratory at the National Institute of Standards and Technology (NIST), where he is developing evanescent wave cavity ring-down spectroscopy (EW-CRDS) for chemical sensing applications. He received his Ph.D. from Northwestern University in chemical physics for experimental and theoretical studies of linear and nonlinear surface enhancement phenomena on nanostructured metal surfaces. As a National Research Council (NRC) postdoctoral associate at NIST (1996-1997) he developed the EW-CRDS technique. The work is currently funded by the Department of Energy and the Advanced Technology Program at NIST.

Dinner Reservation: Please call Denise Wilkins at 412/825-3220 Ext. 290 or 412/476-6615 (leave message) by Noon on February 15, 2002 (Friday), ABSOLUTELY NO RESERVATIONS WILL BE TAKEN AFTER THAT TIME. Dinner will cost \$8 and checks can be made out to the SSP. If you have any dietary restrictions, please make them known when you call.

Parking Instructions: Duquesne University parking garage entrance is on Forbes Avenue. Upon entering the garage, receive ticket and drive to upper floors. Pay parking fee upon exiting with SSP parking chit. Pick up parking chit at the dinner or the meeting. Contact Mitchell Johnson at Duquesne University if any difficulties arise.

nature of our three Societies makes for a strong chemical community in the tri-state region. The Tripartite Symposium, arranged by these three groups, has always been a favorite of mine.

We need to continue to bring new people with fresh ideas into the local section. The support from all members in this region is vital to maintain the health of our local Section. We have offered numerous public service contributions and scientific symposiums in our city and our metropolitan community and we want to continue to do so. If you know of a chemist that is not involved, please encourage them to join a committee. Your help in growing our Pittsburgh ACS Section will be gratefully accepted and appreciated.

And finally, thank you to all the members of the local Section for your past contributions. Your spirit has made science education and life in the Pittsburgh region more enjoyable, stimulating and engaging. I wish you all a good year.

> Mark E. Bier Chair, Pittsburgh Section ACS

## SACP CALL FOR NOMINATIONS

The Society for Analytical Chemists of Pittsburgh is currently soliciting nominations for the 25th Annual Pittsburgh Analytical Chemistry Award, which will be presented at the 2003 Pittsburgh Conference in Orlando, Florida. In addition to a cash award, travel costs to the 2003 Pittsburgh Conference are also included. The award is presented in recognition of significant contributions to the field of analytical chemistry, including: introduction of a significant technique, theory, or instrument and providing exceptional training, or a fertile environment for analytical chemistry.

Nomination deadline is March 8, 2002

Nominations for the 2003 award can be made by sending a one-page letter to:

#### Mr. James Chadwick

The Pittsburgh Analytical Chemistry Award Society for Analytical Chemists of Pittsburgh 300 Penn Center Blvd., Suite 332 Pittsburgh, PA 15235-5503 Visit the SACP Website: www.sacp.org

## TWENTY-THIRD ANNUAL ANALYTICAL CHEMISTRY STARTER GRANT AWARD

The Society for Analytical Chemists of Pittsburgh will award one grant of \$20,000 to an assistant professor in the field of analytical chemistry. The purpose of this grant is to encourage high-quality, innovative research by a new analytical chemistry professor and to promote the training and development of graduate students in this field. Assistant professors who have accepted a United States college or university appointment since December 31, 1998 are eligible. Application forms are available from:

Dr. Fu-mei C. Lin, Chairman Starter Grant Committee Society for Analytical Chemists of Pittsburgh 300 Penn Center Blvd., Ste. 332 Pittsburgh, PA 15235 Phone: 1-800-825-3221, Ext. 204

Fax: 412-825-3224



Duquesne University

Mellon Science Hall 5:30 p.m.

Wednesday, February 20, 2002

### "Pittsburgh's Industrial Past"

Mary Ann Eubanks
Pittsburgh History and Landmarks Foundation

#### Pittsburgh International Science and Technology Festival Call For Judges

The 3rd Annual Pittsburgh International Science and Technology Festival (SciTech Festival) is scheduled for April 6-14, 2002. As a program of the SciTech Festival, the 63rd Annual Pittsburgh Regional Science & Engineering Fair (PRSEF) is looking forward to another successful year. The PRSEF is currently seeking Student Science Fair Projects and professionals to judge these projects. If you would be available to serve as a judge for the fair, please contact Lisa Kosick.

Thanks in advance for your help. We truly appreciate your time and support of the SciTech Festival and the PRSEF.

#### Lisa Kosick

Pittsburgh Regional Science & Engineering Fair Coordinator (412) 237-1534

kosickl@csc.clpgh.org http://www.pittsburghsciencefair.org

## NATIONAL CHEMISTRY WEEK 2001 - "CELEBRATING CHEMISTRY AND ART"

the Pittsburgh Section ACS celebrated National Chemistry Week (NCW) on Friday and Saturday, November 9-10, 2001 at the Carnegie Science Center. The NCW national unifying theme this year was "Celebrating Chemistry and Art." Lead by the Pittsburgh Section's NCW Coordinator V, Michael Mautino, a total of 294 volunteers from 25 groups staffed 28 tables, with various hands-on science experiments, activities, demonstrations, and theater presentations. Forty one percent of the volunteers were Pittsburgh Section ACS members or affiliates of the Section. Total paid attendance for the two-day event was 4580. A total of 600 secondary and elementary school students visited the Science Center on November 9th on school fieldtrips and took part in the NCW activities. Indirectly, 1.2 million people were reached through advertising including NCW messages displayed through out the week on Bayer Corporation's Mt. Washington sign.

Carnegie Science Center visitors were treated to a wide variety of science and chemistry experiments and activities, many with an "art" related theme. To help bring chemistry and the visual arts together, several local art museums joined in with the celebration including the Frick Art and Historical Center, the Mattress Factory Art Museum, and the Carnegie Museum of Art, providing educational and fun activities for the Science Center's visitors. Chef David Watson, Pennsylvania Culinary Institute, performed two shows in the Carnegie Science Center's Kitchen Theater, titled "Sugar - A Science and Art." This interactive performance packed the Science Center's "Kitchen Theater" to capacity for both shows and was an amazing display of artistic culinary expertise.

To help celebrate chemistry and the performing arts, the Pittsburgh Section's Councilor Mordecai Treblow arranged for special theater presentations from local artists. The first of these shows included presentations on "Fiber Dyeing" from Janet Grooms. Costumier from the Pittsburgh Ballet Theater. Ms. Grooms is world renown for dyeing all of the costumes that are used by the Pittsburgh Ballet. Under the direction of Sue Stowe, students from the Point Park College Dance Department presented two shows titled "Chemistry and Dance" with the help of the Pittsburgh ACS Chemist Club. The students performed various dance numbers in costume, while the Chemist Club introduced each dance number with an explanation of the chemistry behind each of the dance costumes.

The Ringling Brothers and Barnum and Bailey Circus performed a special theater presentation focusing on chemistry and the circus arts. Titled "Circus Science," clowns provided an interactive and entertaining performance to the delight of over 150 school students in the Science Center's Highmark Science Stage Theater.

The professional community in Pittsburgh was greatly involved with the 2001 NCW program. The Spectroscopy Society of Pittsburgh (SSP) and the Society of Analytical Chemists of Pittsburgh (SACP) provided a majority of the event's funding. These two groups, along with the SACP's Student Affiliates, sponsored three tables during the NCW event at the Carnegie Science Center. The American Institute of Chemical Engineers and the ACS Division of Chemical Technicians also participated in the NCW event.

Proclamations for "Chemistry Week" were received from the Mayor of the City of Pittsburgh, the Allegheny County Chief Executive Officer and the Governor of the Commonwealth of Pennsylvania.

The NCW Committee wishes to thank the sponsors of this year's event including the Spectroscopy Society of Pittsburgh, the Society for Analytical Chemists of Pittsburgh, Bayer Corporation, and the Carnegie Science Center. Thanks go to members of the Pittsburgh Section's Executive Committee who helped with the event including Jonna Partezana, Sheila Hedges, and Mordecai Treblow. Special thanks go to Michelle Blanken and the students from the Bidwell Training Center's Chemical Laboratory Technician program, especially Elaine Tyler and Tom Frost, for helping to run the event. The NCW Committee also wishes to thank the Carnegie Science Center and its dedicated and talented staff for their help each year with this event. Finally, thanks go to the 294 volunteers who worked at the event, without whom this event would not be possible!

Mark your calendars for NCW 2002. The Carnegie Science Center has been reserved once again for two days, on Friday and Saturday, October 25-26, 2002. The NCW 2002 theme will be "Cleaning

with Chemistry."

V. Michael Mautino

National Chemistry Week

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Event Announcement

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## National Chem



oung scientist at work.



Bidwell Director Michelle Blaman working the NCW regulation table



at Bordell and the SSP table



Dave Wattern and the PPG table



VPTAG table staffed by Tom Frost and David Zang



Chef David Watson from the Pennsylvania Culinary Institute

## ry Week 2001



Watson's creation in sugar



P.J. Pique and the SACP table



V. Coordinator V. Michael Mautino and the NOW Committee (CK so its really the



Sue Stowe and students from the Point Park College Dance Department



e very tred NCW volunteers



One of the many raffle prize winners

Pictures courtesy of V. Michael Mautino

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|--|----------|
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| Atomic Spectroscopy (2 courses)            |          |
| GC, TLC, HPLC, CE (6 courses)              | 27-29    |
| Data Quality (7 courses)                   | 19-22    |
| Writing for Persuasion, Power, Prestige    | 20-21    |
| Creativity for Scientists and Engineers    | 30-31    |
| OSHA Lab Safety Standard (3 courses)       | 20-23    |
| Activated Carbon Adsorption (4 courses)    | 6-10     |
|  |          |

#### **PACS Annual Conferences**

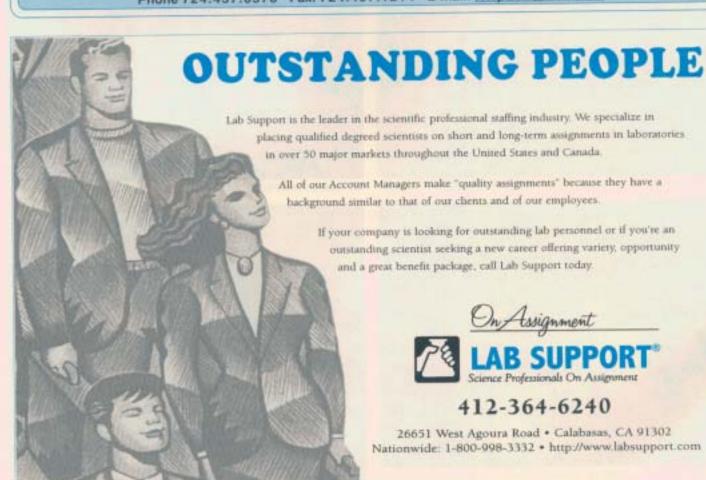
10<sup>th</sup> International Activated Carbon Conference September 26-27, 2002

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#### **Open Position for Crucible Editor**

The Pittsburgh Section of the American Chemical Society is searching for a new Editor of The Crucible for the spring of 2002 following the retirement of long-time Editor Harry Ostapenko.

- The compensation for the Editor of The Crucible is \$640/issue.
- The Crucible is published ten (10) issues per annual volume, with a circulation of about 3,000.
- The Editor receives advertisements, meeting announcements and column suggestions from various sources, and uses computer technology to lay out the format for each issue (Adobe Indesign® is currently used for that process). The Editor writes some articles.
- The Editor maintains and updates a database of recipients for The Crucible using information provided monthly by the National ACS and Section members. This mailing list (currently using Claris Filemaker Pro©) is used by the Editor to prepare mailing labels.
- The Editor delivers an electronic copy of The Crucible and the mailing labels for use by the printer to prepare and mail the issue of The Crucible.
- In consultation with the Advertising Editor, the Editor maintains financial records relevant to the production of The Crucible and submits a year-end report to the Section.
- Adherence to publication deadlines is essential owing to meeting announcements carried in The Crucible.
- A background in chemistry is helpful but not essential.
- Prior issues of The Crucible may be reviewed on the web page of the Pittsburgh Section: http:// membership.acs.org/p/pitt

Interested applicants should contact:

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## ACS Pittsburgh Chemists Club

Pittsburgh Section American Chemical Society

Tuesday, February 19, 2002

### "Pittsburgh and the U.S. Energy Crisis"

#### Mordecai Treblow

Councilor Pittsburgh Section ACS

#### Duranti's Restaurant

128 North Craig Street, Oakland PA

 Cocktail Time (cash bar)
 6:00 p.m.

 Dinner
 6:30 p.m.

 Program
 7:45 p.m.

For reservations, please call Ed Martin by noon, Friday, February 15, 2002 at (724) 335-0904 or email at esm@icubed.com

#### Abstracts

Gasoline prices are about \$1.00 / gallon again, as in 1998, as the price of a barrel of oil has again fallen below \$20.00. Natural gas producers, mostly domestic, have unhappily seen their price fall below \$3.00/MCF; and the winter through mid December was unusually mild. So, where is the crisis!

Yet we have seen the world's largest energy trading company, Enron, in hankruptcy. And OPEC has reduced production by 1.5 million barrels/day to drive up prices again. And we live under the dread cloud of the terror of September 11.

Energy is a topic as broad as the USA, so we limit ourselves:

- A. Introduction: Macco Polo travels the new Silk Road from Tashkent
- ACS National ENERGY Policy and the Pittsburgh Section or how our camel got its nose into the tent
- C. California: its politicians made an awful mess of electricity deregulation
- Enron: the world's largest ENERGY trader follows Humpsy Dumpty over Wall Street
- E. Conservation: How we, you and I, our friends and neighbors, can HELP!

- corollary: what do we do about OPEC?

Mordecai Treblow was born in Philadelphia. He received his BA (chemistry major) from the University of Pennsylvania, the M.S. (organic) at Pennsylvania State University, and he earned his Ph.D. in (analytical / inorganic) chemistry at the University of Pitraburgh. His career was half in teaching chemistry, and half in industry. Industrially, he specialized in chromatography and spectroscopy. He is now in a fifth term as a Councilor for the Pitraburgh Section.

#### **Content Submitters**

Material must be received by the 10th of the prior month for inclusion in the Crucible. This rule will be enforced in order to distribute the Crucible to readers in a timely manner (before the 1st day of every publication month). Under special emergencies, this deadline can be extended, for a variable fee (depending upon content), to cover the changes that the publisher would have to incorporate.

## Polymer Group

Pittsburgh Section American Chemical Society

Wednesday, February 13, 2002

"Crystalline Colloidal Self Assembly: A Motif for Creating Smart Materials for Chemical Sensing and Electro-optics"

#### Professor Sanford A. Asher

Department of Chemistry, University of Pittsburgh

#### Duranti's Restaurant

128 North Craig Street, Galdand PA

For dinner reservations please contact Kurt Wolske, 724/228-1260, or e-mail: wolske@washpenn.com by Monday, February 11, 2002. The cost of the dinner is \$16.00 per person, or \$11.00 for retirees and no charge for students; \$5.00 parking charge for seminar only attendees.

#### SPECTROSCOPY SOCIETY OF PITTSBURGH



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## Coal Technology Group

Pittsburgh Section American Chemical Society

#### February, 2002

The speaker, title of the presentation and the date of the meeting were not finalized prior to the publication date of the Crucible. Please call Robert Gross or check the Pittsburgh ACS web site for updated information on the October meeting.

#### More Restaurant

214 North Craig Street, Oakland PA

| Networking11:30 | a.m. |
|-----------------|------|
| Lunch12:00      | noon |
| Speaker1:00     | p.m. |

For reservations/menu selection or more information contact Robert Gross at 1-304-285-4374, or email robert gross@netf.doe.gov 
Cost for dinner will be \$11.00 for Coal tech group members and \$12 for non-members. Seating may be limited.

#### SOCIETY FOR ANALYTICAL CHEMISTS OF PITTSBURGH



5 .... 8, 9 .... 9 .... 10 .... 11 .... 9

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## Pittsburgh Area Calendar

March / February

Mon 4 Society for Analytical Chemists of Pittsburgh (SACP)
Duquesne University, Maurice Falk Hall

Dr. Allen J. Bard, 2001 Pittsburgh Analytical Chemistry Awardee, The University of Texas at Austin
"The Principles and Development of Electrogenerated Chemiliuminescent-Based Analytical Methods"

Wed 13 Polymer Group

Duranti's Restaurant, 128 North Craig Street, Oakland, PA
Professor Sanford A. Asher, Department of Chemistry, University of Pittsburgh
"Crystalline Colloidal Self Assembly: A Motif for Creating Smart Materials for Chemical Sensing and
Electro-optics"

Tue 19 ACS Pittsburgh Chemists Club

Duranti's Restaurant, 128 North Craig Street, Oakland, PA Mordecai Treblow, Councilor Pittsburgh Section ACS "Pittsburgh and the U.S. Energy Crisis"

Wed 20 Spectroscopy Society of Pittsburgh (SSP)

Duquesne University, Student Union Ballroom Dr. Andrew Pipino, NIST

"Chemical Sensing with Miniature High-Finesse Optical Resonators: Evanescent Wave Cavity Ring-Down Spectroscopy"

Wed 20 Technology Forum of the SSP

Duquesne University, Mellon Hall of Science Mary Ann Eubanks, Pittsburgh History and Landmarks Foundation "Pittsburgh's Industrial Past"

Sun 17-22



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