

The
North American Catalysis Society
NEWSLETTER

July, 2001

<http://www.dupont.com/nacs>

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Letter from President Vannice

June 17, 2001

Dear Colleagues,

This will be my last letter to you as President of the NACS. I have just returned from the 17th NAM, which was held last week in Toronto. It was an excellent, well-run meeting, with many superb papers, and I commend the Canadian Catalysis Society on a job well done. I have been told that there were about 1050 total participants, with about 950 involved in the technical program. Of the latter group, 85 students and post-doctoral fellows had received Kokes Awards, and the NACS now provides \$15,000 as a gift to each NAM to be used for these awards.

Our Board of Directors Meeting was held on June 3 in Toronto, and I will update you on some of the more important decisions that were made. First, the NACS is very supportive of a stronger interaction with ORCS, and our Board of Directors voted to provide \$5000 for Kokes awards to the next national ORCS meeting. In addition, their input in session planning at the NAMs is welcomed and this may occur at the next meeting in Cancun. Second, and very importantly, it was decided that the NACS will provide up to \$10,000 to prepare articles of incorporation along with documents to file for 501-3-C (tax-free) status for each individual club within the USA, thus sparing each of these clubs any cost. This is presently contingent upon retention of one particularly appropriate attorney. Third, money for the Kirill Zamaraev Fund was approved to help sponsor former Soviet Union scientists if they attend catalysis meetings in North America, and a committee will review applications. Fourth, the net assets of the NACS are now over \$500,000, with almost all of this amount invested in the Keith Hall Educational Trust Fund. I had appointed a committee to examine how the interest from the Fund should be used, and it recommended that a high-quality Catalysis website be developed; consequently, money was allocated for this purpose. Although various suggestions were made about the content of the website, should any of you members have additional thoughts about this, please contact Curt Conner.

Finally, new officers were elected at this Board of Directors meeting, and they are: President - John Armor, Vice-President - Gary McVicker, Treasurer - John Byrne, Secretary - Umit Ozkan, and Foreign Secretary - Curt Conner. This is an excellent group and I am sure they will serve you well. As the out-going President, I would like to thank all my fellow officers for their help and contributions, with particular thanks going to John Armor for all the time he has spent related to our IRS status and other tax questions. Pat Doolin has very successfully headed the group of trustees for the Educational Trust Fund, and I thank her for her time and effort during the past six years. I have considered it an honor and a privilege to serve as President during the past four years, and I consider the NACS currently to be on a strong foundation and in very capable hands.

My best to you all. Don't forget the 18th NAM in Cancun, Mexico in June, 2003!

Sincerely,
M. Albert Vannice

A Brief Note From Your New President

Let me say how honored I am to serve as your President for the next four years. I encourage any member to communicate any concerns or suggestions directly to me via email at either armorjn@apci.com or cbarmor@enter.net. I am looking for constructive suggestions as well as ways to implement the guidance the Board of Directors has provided at the very productive Board meeting in June. I also wish to do whatever I can to sustain and nurture the momentum we all received from a very successful NAM meeting in Toronto. All those involved with the very successful operation of the Toronto NAM should be proud of a job well done, and they deserve our gratitude for their donation of the time that it took. Also, on behalf of the Board, I wish to thank Al Vannice and his previous slate of officers for their very effective operation of the Society. Our Society shall continue to strive to be a resource to those working in catalysis in North America, and we shall continue to seek new ways to advance one of major purposes of our Society: to promote and encourage the growth and development of the science of catalysis.

John N. Armor, 3 July, 2001

New NACS Officers and Directors-At-Large

At the NACS Board of Directors Meeting, officers for the next 4 years were elected. In addition Director's at large from the February general election were seated. The new Officers and Directors at Large are:

President:	John Armor, Air Products and Chemicals
Vice-President	Gary McVicker, ExxonMobil
Secretary	Umit Ozkan, Ohio State University
Treasurer	John Byrne, Engelhard
Foreign Secretary	Curt Conner, University of Massachusetts
Directors at Large	John Armor, Air Products & Chemicals; Kathleen Taylor, General Motors; Bruce Gates, U. C. Davis; Gary McVicker, ExxonMobil

Keith Hall 1918 - 2001

Keith Hall passed away in his farm/home at Mill Run, Pennsylvania on Jan. 3, 2001 at the age of 82. The catalytic community has lost a major family-member and leader.

Keith was born in McComb, Ohio and graduated from Emory University in 1940. Shortly thereafter he worked on Manhattan Project under the direction of George Kistiakowski and Louis Hammett. Keith met and married his wife Gladys in 1945 while at Bruceton. As the war ended, Keith continued at the Bureau with H. H. Storch and Robert B. Anderson where he was introduced to Fischer-Tropsch catalysis. Concurrently, he received his MS in 1948 from Carnegie Institute. In 1951 Keith worked on his PhD at Mellon Institute under Paul Emmett and received his PhD in 1956 from University of Pittsburgh and continued to work at the Mellon Institute until 1970 when he took a Senior Scientist position with Gulf Research outside Pittsburgh. Keith retired from Gulf in 1973 but George Keulks convinced Keith to accept the position of Distinguished Professor of Chemistry at the University of Wisconsin-Milwaukee. Keith retired again in 1985 but his retirement was short lived, and he became Distinguished Professor at the University of Pittsburgh. Keith finally retired, for the third and final time, from this position in 1998.

Keith started his catalysis research on Fischer-Tropsch synthesis with Bob Anderson and continued with Emmett but he also initiated studies of hydrogenation over metals and alloys to test Dowden's electronic theories of catalysis. His employment of isotopic techniques was highly visible throughout his career. He published seven papers with Emmett. Keith continued his interest in hydrogen on solids, primarily metals supported on oxides. He employed a variety of techniques including ESR and NMR often coupled with isotopic studies. Keith soon became interested in acidity of silica alumina and eventually on zeolites, an interest that would continue throughout his

research. He studied hydrocarbon isomerization over a variety of surfaces. Keith also became involved in studies of oxidation on metals and eventually on metal oxides, most notably Mo/Al₂O₃. In the 1980's Keith initiated a series of studies related to auto exhaust catalysis. These started with Fe/zeolites and eventually Cu/zeolites, where he developed considerable insight into SCR and Ox reactions. In parallel, Keith's interest in the reasons for catalytic acidity and in the role of hydrogen on metals and oxides continued well into the 1990's.

Keith's publications have had a profound impact on the catalytic community. Altogether he had more than 4,000 citations to his work some more than a hundred times. Keith served and led the Catalytic and Chemical community in several ways. He was the editor on the Journal of Catalysis from 1967 to 1989, a period when J.Catal. became the primary Journal in heterogeneous catalysis. Keith was the president of the Catalysis Society of North America from 1981-85 and founded the Catalysis Society Trust, which has given the society on a strong fiscal base. Keith lectured at Gordon Conferences, chaired the Conference on Catalysis, and served as a Trustee of the Gordon Conferences from 1981-87. Keith was active in the ACS and served on the executive committee on the Colloid and Surface Chemistry Division. Keith received numerous awards, including the Kendall Award, the ACS Petroleum Chemistry Award, and the Exxon Award for Excellence in Catalysis.

One of the most notable aspects of Keith Hall's research career is the large number of people with whom he worked and to whom he graciously attributed their joint accomplishments. He learned from as he taught each of his students, postdoctoral students, and research colleagues. More than a dozen students received their graduate degrees under Keith's supervision. In addition, Keith has collaborated with over ninety other catalytic research scientists around the world and had over one hundred and twenty co-authors in his more than three hundred and fifty publications.

It is obvious that Keith Hall's influence on catalytic research has been profound not only in what he has accomplished directly but in his vast network of interactions throughout the catalytic world. Moreover, Keith readily served as a leader in the catalytic research community through the Journal of Catalysis, the Gordon Conferences and the Catalysis Society. All scientists in catalysis have lost a family member! (go to www.dupont.com/nacs/Hall.html for a complete eulogy)

Kirill Zamaraev Fund for Support of Travel for Students and Scholars from Russia and FSU Countries

The Kirill Zamaraev Fund has been established by the North American Catalysis Society (NACS) to assist students and scholars working in the field of catalysis in Russia and FSU countries, who plan to attend a technical meeting within the U.S. To obtain support from this Fund, a formal application must be submitted to Prof. Alexis T. Bell [Department of Chemical Engineering, University of California, Berkeley, CA 94720-1462, USA; bell@cchem.berkeley.edu] stating for committee review and state the title, dates, and location of the meeting. Individuals seeking support should also indicate whether or not a paper has been accepted for presentation at the meeting. If a paper has been accepted, the title and abstract for the paper should be submitted. Strong preference will be given to applicants who will be presenting a paper. Applications for support from the Zamaraev Fund should be received at least three months in advance of the meeting in which the applicant would like to participate.

Support from the Zamaraev Fund can be used to offset travel and registration expenses, and will be in an amount not to exceed \$1000. (total funds budgeted at \$2000/2 years) The meeting or symposium that the applicant would like to attend must have a clear focus on catalysis such as, symposia on catalysis held as part of a national ACS or AIChE meeting, a meeting of the North American Catalysis Society, or the Gordon Conference on Catalysis.

Each person receiving support from the Zamaraev Fund will be required to complete Internal Revenue Service (IRS) forms 1001 and 1042-S. These forms will be provided by NACS and should be completed by recipient and returned to NACS, so that they can be filed with the IRS at the appropriate time.

Club/Society News

The Catalysis Club of Philadelphia announces that **Prof. Mark Barteau** of the Univ. of Delaware was awarded the Club's 2001 Catalysis Award for his numerous accomplishments in surface science and catalysis. The award was presented to Mark at the Club's Spring Symposium held on May 31 in honor of Ted Koch at the Univ. of Delaware. The symposium was organized by Chair-Elect Jennifer Jewson of Lyondell. The Club held its annual Student Poster Contest on January 18, 2001. An impressive group of twenty-three posters were prepared and presented by students and postdocs from PA, NJ, DE and MD. This year the First Prize Award (\$250) was renamed the Alan W. Peters Memorial Award, in honor of an ardent supporter of the Club and especially its student poster session. The Club gratefully acknowledges W.R. Grace for sponsoring the award in memory of its long-time colleague. The winner was Mallika Gummaila of the Univ. of Massachusetts/Univ. of Delaware. In addition to the poster session the club was delighted to host a presentation by Dr. Gary B. McVicker, the 2000 F. G. Ciapetta Award Lecturer. New officers for 2001-2 are Chair, Jennifer Jewson, Lyondell cnsjld@lyondell.com; Treasurer, Hasan Dindi, DuPont; Secretary, Hai-Ying Chen, Johnson Matthey; Program Chair, Dan Hancu, Lyondell; Chair-Elect, Todd Ballinger, Johnson Matthey; National Rep., Anne Gaffney, Rohm & Haas

The Michigan Catalysis Society
The Michigan Catalysis Society is proud to announce that **Professor D. Wayne Goodman** (Texas A&M University, Dept of Chemistry) is the recipient of the Parravano Award for Excellence in Catalysis based on his outstanding

contributions to catalytic science and technology. Professor Goodman delivered his award address "Toward an Understanding of Catalysis by Supported Metal Nanoclusters" at the 23rd Michigan Catalysis Society Spring Symposium on May 10. The Society belatedly reports that **Dr. Robert A. Stowe** was the winner of the 2000 Parravano Award for Excellence in Catalysis Research and Development. Bob's extended career includes 36 years as a research scientist at Dow Chemical Co. and 10 as an entrepreneur and consultant in catalytic and process chemistry. He was cited for his "many significant contributions, both to science and to the profitability of Dow, as well as the enabling process development work for his client, a small specialty chemicals start-up company. The Parravano Award is sponsored by the Memorial Trust Fund for Professor Giuseppe Parravano, which has been established at the Department of Chemical Engineering, The University of Michigan.

The Southwest Catalysis Society and the Center for Catalysis at Texas A&M University hosted a symposia on Thursday, May 17 and Friday, May 18. The event included a symposium on Oxidation Catalysis, as well as presentations related to other aspects of heterogeneous catalysis.

The Catalysis Division, The Canadian Society.

The 17th Canadian Symposium on Catalysis will be held in conjunction with the Canadian Society of Chemistry meeting in Vancouver on June 1-5, 2002. The conference will cover most aspects of heterogeneous and homogeneous catalysis, with a strong focus on

environmental issues. It is planned to have focused sessions on catalysis in the areas of fuel cells and related fuel processing applications and automobile exhaust after treatment. Abstracts will be considered for either oral or poster presentation. Authors should submit abstracts by email to: Dr. R.E. Hayes, University of Alberta, Edmonton, Alberta. email address: bob.hayes@ualberta.ca. The deadline for submission of abstracts is November 30, 2001. Authors should state their preference for oral or poster presentation. The final choice of oral or poster will be determined by the Programme Chair. www.ualberta.ca/CMENG/Csc2002/

The Tri-State Catalyst Club. The Tri-State Catalysis Society covers the states of Kentucky, Ohio and West Virginia. Its members come from both academia and industry. Anyone interested in catalysis and related science and technology is invited to join. The Society is always willing to host speakers for its meetings, which take place in October, November, January, February, and March. The annual Spring Symposium is typically held in April or May. Persons interested in learning more about the Tri-State can contact Bill Turner at 502-634-7203 or by e-mail at btur@sud-chemieinc.com. Web Site: <http://home.talkcity.com/NonProfitBlvd/tscatalysis/index.html>. A special issue of Catalysis Today, edited by Professor Vadim V. Gulians (University of Cincinnati) dedicated to "Current Developments in Combinatorial Heterogeneous Catalysis" will appear in press in early July (Catalysis Today 2001, vol. 67, n. 4). This special issue covers a wide range of topics in combinatorial catalysis and provides a snapshot of this rapidly

developing field of applied materials science.

Panagiotis (Peter) Smirniotis, of the Chemical Engineering Department of the University of Cincinnati, received the 2000 Young Investigator Award from the Department of Army and the 2000 Science for Peace Award from NATO for applying photo-catalysis for destruction of chemical warfare agents (CWA) and other toxic organics both in liquid and gas phases.

The 2001 Tri-State Catalysis Spring Symposium was held on April 17th and 18th in Covington, Kentucky. Keynote Speakers were Alexis Bell – winner of the 2001 ACS Award for Creative Research in Homogeneous or Heterogeneous Catalysis, Leo Manzer – winner of the 2001 Eugene J. Houdry Award for Applied Catalysis and Gary McVicker – winner of the 2000 F. G. Ciapetta Lectureship in Catalysis Award.

The Catalysis Society of Metropolitan New York is pleased to announce that “**The BP Propane Ammoxidation Catalyst Team**”, currently part of BP-Amoco Chemicals, will receive its Excellence in Catalysis Award for the year 2001. The award, sponsored by the ExxonMobil Research and Engineering Company, consists of a plaque and a \$1,200 gift. The award is given annually to recognize outstanding contributions in either applied or basic research in either homogeneous or heterogeneous catalysis. “The BP Propane Ammoxidation Catalyst Team” was responsible for the development of a novel catalyst and process that economically ammoxidizes propane to acrylonitrile, a building block for acrylic fibers, plastics and nitrile rubber. Key to this important technological breakthrough was the

discovery of a novel catalyst system, which allowed the development of a revolutionary new, one-step, propane-based production route with significant advantages over conventional propylene-based routes. Dr. James F. Brazdil, accepted the award on behalf of the team and spoke before The Catalysis Society of Metropolitan New York on May 16, 2001.

The Catalysis Society of New England held its annual Spring Symposium on April 28 at the new Campus Center at Worcester Polytechnic Institute. The keynote speaker was Dr. Gary McVicker from ExxonMobil who spoke about the evolution of enhanced reactivity Pt/K-L reforming catalysts. Prof. Bob Davis from the University of Virginia gave an invited talk on solid acids and bases as catalytic materials. Amongst the contributed talks, an important theme was catalytic combustion over Pd catalysts with three contributed talks; one from WPI and two from Yale

The Catalysis Club of Chicago announces that the winner of the 2001 Herman Pines Award is **Professor Lanny Schmidt** of the University of Minnesota. Professor Schmidt presented the keynote address at the Club's Spring Symposium held on May 22. Also, Professor Ayusman Sen of Pennsylvania State University delivered an invited lecture at the Symposium. Graduate Student Poster Awards went to Vaidyanathan Subramanian of the University of Notre Dame and Scott McMillan of Northwestern University. New Officers are Paul Barger (UOP), President; Larry Satek (BP) Program Chair/Vice President; Wolfgang Spieker (UOP), Secretary; Bryce Williams

(BP), Treasurer; Chris Marshall (Argonne National Lab), Director; Jeffrey Miller (BP), Director; George Antos (UOP), NACS Representative.

The Mexican Academy of Catalysis addresses a cordial invitation to participate to the 7th Mexican Congress on Catalysis, which will be held from November 27 to December 1st of 2001 in Acapulco, Mexico. There will be three plenary lectures, 30 oral presentations and two poster sessions. The technical program will include topics such as Catalyst preparation and characterization, catalysis by sulfides, Catalysis by metals, catalysis by metal oxides, catalysis by micro and mesoporous materials, environmental catalysis, homogeneous catalysis. Important dates: July 6: Second circular Sept. 7: Deadline for reception of two page abstracts. Oct. 8: Acceptance of presentations Nov. 27: Start of the congress. Abstracts for oral and poster presentations must be submitted in MSWord, Times New Roman font size 12 by E mail to: caero@servidor.unam.mx All inquiries should be addressed also to the above E-mail.

The Organic Reactions Catalysis Society announces that the winner of its 2001 Paul Rylander Award is **Fran Waller** of Air Products & Chemicals and the winner of the MurrayRaney Award is **Professor Akira Tai** of Osaka University in Osaka, Japan. The Society's 19th Conference on Catalysis of Organic Reactions will be held at the Marriott Plaza in San Antonio TX, April 14-18, 2002. Contact Dennis Morrell, Hercules Incorporated, Research Center, 500 Hercules Road, Wilmington DE 19808, 302-995-3446, fax: 302-995-4324, dmorrell@herc.com; www.orcs.org.

The Pittsburgh-Cleveland Catalysis Society held its 39th Annual Spring Symposium on May 10, 2001 in Monroeville, PA. The one day program included two sessions of oral presentations and a poster session. Our featured speakers were Professor Tobin J. Marks (Northwestern University), winner of the 2001 Robert Burwell Lectureship in Catalysis, and Professor Andrew J. Gellman (Carnegie Mellon University). A special memorial to W. Keith Hall, an early and prominent member of the Society, was given by Dady Dadyburjor (West Virginia

University) and Irving Wender (University of Pittsburgh). The winner of the student paper award was Robert M. Rioux (Department of Chemical Engineering, Pennsylvania State University) for his oral presentation entitled "Isopropanol Dehydrogenation Over Carbon Supported Monometallic and Bimetallic Cu-Pt Catalysts". Jian Zheng (Energy Institute, Pennsylvania State University) was given an Honorable Mention for his presentation entitled "Influence of Ba-Pt Interaction on n-Hexane

Aromatization over Pt/BaKL Zeolite". Officers for 2001-2002 are James B. Miller (Mine Safety Appliances Co.), President; Andrew J. Gellman (Carnegie Mellon University), President-Elect; Steven J. Monaco (formerly of Aristech Chemical Corp.), Secretary; and Chuan-Bao Wang (Industrial Scientific Corp.), Treasurer. Dady B. Dadyburjor, the immediate past President, will assume the role of Director when the term of M. Albert Vannice (Penn State University) ends later this year.

Meetings

August 26-30, 2001. Catalysis in Fuel Processing for Fuel Cell Applications. Chicago, IL. ACS Symposium. Contact Chunshan Song, Penn State Univ. (814) 863-4466. csong@psu.edu.

September 16 - 21, 2001. 4th World Congress on Oxidation Catalysis. Berlin, Germany. Contact DECHEMA e.V. Attn. Ms. Heike Geiling. geiling@dechema.de

Oct. 7-10, 2001. 9th Intern'l Symposium on Catalyst

Deactivation. Lexington, KY. Contact Burt Davis, CAER, 2540 Research Park Dr, Lexington, KY 40511-8410. (606) 257-0251 fax (606) 257-0302. crtc.caer.uky.edu/iscd/home.htm

April 7 -11, 2002. Selective Oxidation of Alkanes. Orlando, FL. ACS Symposium. Contact Anne M. Gaffney, Rohm&Haas Co. (215) 619-5260. anne_gaffney@rohmmaas.com.

Applications of Biocatalysis to Industrial Based Processes. Orlando, FL. ACS Symposium. Contact Scott F. Mitchell, DuPont Co. (302) 695-1742. scott-fenton.mitchell@usa.dupont.com.

Catalysis Dependent New Commercial/Near Commercial Technologies for Improving Air Quality. Orlando, FL. ACS Symposium. Contact Robert A. Stowe, Bobcat Technologies. (231) 526-5078. rstow@northlink.net.

June 12-15, 2002. **Nanoporous Materials-III.** Ottawa, Ontario, Canada. Contact Abdel Sayari, Univ. of Laval. (418) 656-3563. sayari@gch.ulaval.ca. www.science.uottawa.ca/nano-3/

This Newsletter is a publication of The North American Catalysis Society, President: Dr. John N. Armor, Air Products & Chemicals; V. President: Dr. Gary McVicker, ExxonMobil; Secretary: Dr. Umit S. Ozkan, Chemical Engineering Dept, Ohio State University, Columbus, Ohio 43210, ozkan.1@osu.edu; Treasurer: Dr. John W. Byrne, Engelhard; Past President: Dr. M. Albert Vannice, Penn State Univ.; Directors-at-Large: Dr. Bruce Gates, UC, Davis, Dr. John Armor, Air Products & Chemicals, Dr. Gary McVicker, Exxon, Dr. Kathleen Taylor, General Motors. Club Representatives: California-Dr. E. Iglesia; Canada-Dr. C. A. Mims; Chicago-Dr. G. Antos; Mexico-Dr. G. Diaz; Michigan-Dr. G. Fisher; New England-Dr. W.C. Conner; New York-Dr. J. Byrne; Philadelphia-Dr. A. Gaffney; Pittsburgh/Cleveland-Dr. M. A. Vannice; Organic Reactions-Dr. S. E. Jacobson; Southwest-Dr. R. A. Kemp; Tri-State-Dr. B. D. Davis; Western States-Dr. A. Datye. Contributions for the Newsletter should be directed to the Editor, Dr. Michael B. D'Amore, DuPont Company, P.O. Box 80262, Experimental Station, Wilmington DE 19880-0262, Ph: (302) 695-2488, Fax: (302) 695-8347, E-mail: michael.b.damore@usa.dupont.com. Society Web address www.dupont.com/nacs.