

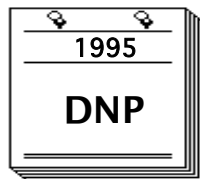
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**TO: Members of the Division of Nuclear Physics, APS**  
**FROM: Virginia R. Brown, LLNL - Secretary-Treasurer, DNP**

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**ACCOMPANYING THIS NEWSLETTER:**

- A ballot and brief biographies of DNP Candidates
- A List of Bonner Prize Donors
- The DNP Brochure
- The Long-Range-Plan-Charge Letter from the Agencies



**Future Deadlines**

- **6 Jan. 1995** - Last day for Abstracts to College Park, MD, APS Office for Spring Meeting (See Item 3)
- **13 Jan. 1995** - DNP Election Ballot (See Item 1)
- **1 April 1995** - Nominations for APS Fellowship (See Item 8)

**1. ELECTION OF OFFICERS AND EXECUTIVE COMMITTEE FOR 1995**

The terms of the officers and three members of the present Executive Committee will expire at the close of the regular meeting of the Division to be held in

conjunction with the APS general meeting in Washington, D.C., 18-21 April 1995. J. Dirk Walecka will become Chair, Carl B. Dover will become Past-Chair, and Lee L. Riedinger will become Chair-Elect. A. Baha Balantekin, Elizabeth J. Beise and Glenn R. Young will remain members of the Executive Committee. A Vice-Chair, Secretary-Treasurer, and three members of the Executive Committee are to be elected before April 1995.

This year's Nominating Committee consists of J. M. Cameron (Chair), J. A. Cizewski, P. Paul and J. Vary. The candidates selected by the Nominating Committee are as follows:

**Vice-Chair, (one position)**

Bunny C. Clark, OSU  
Donald F. Geesaman, ANL

**Secretary-Treasurer**

Virginia R. Brown, LLNL

**Executive Committee (three positions)**

Richard N. Boyd, OSU  
Warren W. Buck, Hampton

Joseph I. Kapusta, Univ. of Minnesota  
Barbara V. Jacak, LASL  
Robert W. Lourie, Univ. of Virginia  
Shoji Nagamiya, Columbia

The enclosed ballot must be signed and may be returned in the enclosed envelope with your name and address printed or signed legibly in the upper left hand corner of the envelope. It must be received by *Virginia R. Brown* on or before **13 January 1995** in order to be counted.

If you are a DNP member, please exercise your right to vote for candidates in the upcoming DNP elections. Typically only about 900 election ballots are mailed in by members. **Your vote counts, and it is important!**

## **2. REPORT ON THE DNP FALL MEETING AT WILLIAMSBURG, VA, 26-29 OCTOBER 1994**

The Annual Fall Meeting of the Division of Nuclear Physics, including workshops, was held 26-29 October 1994 at the Fort Magruder Inn & Conference Center in Williamsburg, Virginia. The meeting was highly successful and well attended with 614 registered attendees and many guests. The weather was pleasant for almost the entire week. On behalf of the membership, the DNP Executive Committee is pleased to acknowledge the hard work, careful planning, and delightful hospitality of our local hosts, with special thanks to Roy Whitney, Chair of the Local Committee, for his very important contributions to the success of this meeting. The DNP is pleased also to acknowledge the invaluable contributions and excellent organization from the Local Conference Staff, Karen Hokansson, Julie Leverenz, and Gladys Smith, who worked many months preparing for the meeting.

In addition to the main meeting program, there were a number of other well attended events. These included the capacity filled rooms for the plenary session and the "town meeting", two well attended and interesting workshops on Wednesday, the very nice reception tours of the CEBAF experimental area on Wednesday and Thursday attended by 450 participants, the DNP/APS "high school teacher's day at the meeting" attracting 30 local teachers, and the first DNP "public lecture at the meeting", which had an audience of about 100 people. Another highlight was the release of the DNP Brochure at the "town meeting." In addition, there was a well attended banquet on Friday evening with a very lively and entertaining talk by Herman Grunder on "*The Accelerator that Could.*" A further description of some of these events can be found below.

Other meetings held in conjunction with the DNP meeting included an NSAC meeting on Wednesday afternoon and the eight user group meetings: 88" Cyclotron, AGS/RHIC, ATLAS, CEBAF, Gammisphere, HRIBF, IUCF, and NSCL on Thursday and Friday afternoons. The CSWP (the APS Committee on the Status of Women in Physics) and the U. S. Nuclear Data Network Executive Committee also held their meetings at Williamsburg.

### ***Meeting Program***

The meeting consisted of six sessions of invited papers, one of which was the plenary session, and 242 contributed papers divided into 21 sessions of contributed papers. The main meeting opened on Thursday morning with the DNP Plenary Session, described below, on "*Future Opportunities in Nuclear Physics.*" The other invited sessions on "*Strangeness in Nucleons and Nuclei*", "*Spin Physics with*

*Polarized Gas Targets Internal to Storage Rings*", "*Primordial Nucleosynthesis and the Baryonic Content of the Universe*", "*Nuclear Structure from Low to High Energy*", and "*Frontiers of Nuclear Interactions*" were all well attended as were the various contributed sessions.

### ***Plenary Session***

The plenary session for the Williamsburg meeting focused on the theme "*Future Opportunities in Nuclear Physics*", in preparation for the next "Long Range Plan." The session, which took place before a full house and was chaired by J. D. Walecka, was in the form of a panel presentation and discussion. The speakers and topics were D. Geesaman (ANL), "Hadronic Interactions", B. Zajc (Columbia Univ.), "Heavy-Ion Reactions", D. Beck (Univ. of Illinois), "Electromagnetic Interactions", S. Freedman (UCB), "Weak Interactions", S. Koonin (Caltech), "Nuclear Theory", W. Haxton (Univ. of Washington), "Nuclear Astrophysics", and J. Garrett (ORNL), "Radioactive Beams".

### ***"Town Meeting"***

The "*town meeting*" took place from 16:00-17:30 on Friday afternoon before a packed audience. Carl Dover, the DNP Chair, opened the meeting with an expression of thanks on behalf of the Division and its members to the Local Organizing Committee. The slate of candidates for DNP offices and the Executive Committee was presented (See Item 1 of this newsletter.) The DNP members in the audience were encouraged to vote.

Next Gary Crawley announced the release of the DNP Brochure entitled "*Nuclear Physics: Basic Research Serving Society*." Three hundred copies of the

brochure were made available at the "*town meeting*", and these all disappeared quickly. Crawley thanked the many people who contributed to the brochure. In turn, Carl Dover and J. Dirk Walecka thanked Crawley for all his hard work in spearheading the effort to complete the Brochure. See Item 14 of this newsletter for additional information.

The holding of town meetings is part of a continuing effort to provide timely information to the DNP membership and to provide a forum for public comment on issues that affect our field. This portion of the "*town meeting*" was chaired by J. D. Walecka, who has been the Acting Chair of the DNP. The talks presented in the Thursday morning Plenary Session were open for further discussion. Microphones were set up around the room and the panel of plenary session speakers D. Geesaman (ANL), B. Zajc (Columbia Univ.), D. Beck (Univ. of Illinois), S. Freedman (UCB), A. B. Balantekin (Univ. of Wisconsin) standing in for S. Koonin, W. Haxton (Univ. of Washington), and J. Garrett (ORNL) were gathered on the stage for questions and comments from the audience. The discussion was lively and was getting even more so as the time ran out.

A discussion on matters of mutual interest and reports on the budget situation from the perspective of the funding agencies were presented by Jack Lightbody, Program Director for Nuclear Physics at the NSF, and Dave Hendrie, Director of the DOE Division of Nuclear Physics. The budget situation is summarized in Item 11 of this newsletter.

Ernie Moniz, NSAC Chair, gave a report on the NSAC meeting held at Williamsburg two days before the "*town meeting*." He reported on the charge from NSF and DOE to NSAC for a new Long

Range Plan for Nuclear Physics. Moniz outlined a schedule for the coming year, including "town meetings" organized with the DNP to be held in January 1995. A write-up of the NSAC and LRP report is presented as Item 12 of this newsletter.

Herman Feshbach was next with a report on activities around "International Collaboration." For more information see Item 16 of this newsletter.

Finally there was an announcement of the recent availability of "nucl-ex", An Electronic Archive for Experimental Papers in Nuclear Physics by T. Goldman.

### **Workshops**

Two workshops were held prior to and in conjunction with the DNP meeting. Highlights of these workshops are described below.

#### ***"Spin Degrees of Freedom in Electromagnetic Nuclear Physics", V. D. Burkert (CEBAF)***

One hundred twenty nine scientists registered for this one-day workshop to discuss technical as well as physics issues related to use of polarized electron and photon beams, polarized solid state targets, and recoil polarimetry (four talks). Rapid progress has been made in the area of electron sources with high polarization using strained GaAs crystal. Although presently limited to relatively low currents these sources have already been used in experiments where the current was limited due to other factors such as the performance of the polarized target at SLAC. Many of the upcoming experiments at CEBAF would greatly benefit from the implementation of such a source. New and potentially very fruitful developments have been reported in the area of polarized

photon beams based on Compton backscattering. An important advantage of this technique over coherent bremsstrahlung beams is that the photon flux is concentrated at the high energy part of the spectrum thus eliminating much of the background problems present in bremsstrahlung beams. Proton and deuteron recoil polarimetry is becoming a mature techniques. Recoil polarimeters have been calibrated up to 2.4 GeV for protons and 700 MeV for deuterons. Latest experimental results from the polarized structure function measurements on hydrogen and deuterium targets at SLAC and CERN were discussed (two talks). Two theoretical talks regarding the interpretation of polarized structure function measurements in the deep inelastic region and at low momentum transfers were presented as well. The fundamental Bjorken sum rule seems to be in agreement with the world data, while the data are not in agreement with the Ellis-Jaffe sum rules. The fraction of spin carried by the quarks as found in the analysis of these experiments is around 30%, while the s-sbar contribution to the nucleon spin is about 10% with large error bars. Two talks covered the upcoming measurements of polarization observables in (e,e'p) reactions on nuclear reactions, and in experiments on the nucleon to study electromagnetic and weak formfactors of the ground-state nucleon, as well as of excited baryon states. One of the obvious conclusions of the workshop was that use of spin polarization in electromagnetic nuclear physics at intermediate energies will greatly enhance the potentials of the experiments to discover new phenomena.

#### ***"Data Acquisition and Reduction Issues in Nuclear Physics", L. Dennis (FSU)***

Fifty eight scientists attended this one day workshop on Data Acquisition and Reduction Issues in Nuclear Physics. The workshop focused on ongoing projects in nuclear physics which are intended to meet the computational challenges of the next generation of experiments at CEBAF and RHIC, but it included discussions of the work done to date at a selected group of high energy physics facilities. The workshop began with a presentation by Dave Doughty of Christopher Newport University on the data acquisition at CEBAF and in particular the progress on data acquisition for the CEBAF Large Acceptance Spectrometer. Tom Carey of Los Alamos national laboratory presented the and plans for the RHIC detectors. William Watson of CEBAF discussed the Experimental Physics Instrumentation and Control System (EPICS) which was developed by Argonne and Los Alamos National Labs and is being used for accelerator control at CEBAF and will be used for slow controls of the detectors at CEBAF as well. Graham Heyes of CEBAF discussed the CEBAF On-line Data Acquisition (CODA) software and its capabilities. He emphasized that this is being used at laboratories outside of CEBAF and that those laboratories are assisting in its development. Harrison Prosper of Florida State University described the software being used by the D0 collaboration at FermiLab. He emphasized that the major problem they have is with the off-line access to data for analysis and that this problem is associated with the large quantity of data which must be processed and understood. Dave Quarrie of Livermore Laboratory outlined the Pentabyte Archival and Storage System (PASS) project now underway at Livermore. This project would use a widely distributed storage system to provide scientists with access to the information they need. Bruce Gibbard of

Brookhaven National Laboratory described some of Brookhaven's plans to deal with the large software development projects currently underway and also related some experiences from high energy physics experiments. As a result of these presentations one major topic which emerged was that the problems associated with providing access to large volumes of data are significant and that a great deal of effort remains before these problems are solved. It was also clear that collaborations between groups at different institutions would be beneficial. In order to facilitate this a software resource World Wide Web page has been established at the following Universal Resource Locator (URL):<http://www.scri.fsu.edu/~drago/srin.html>

#### ***High School Teachers' Day, B. Williams (CEBAF)***

The High School Teachers' Day at the American Physical Society Meeting of the Division of Nuclear Physics was held on Thursday, October 27, 1994, at the Fort Magruder Inn and Conference Center in Williamsburg, Virginia. APS worked with the Continuous Electron Beam Accelerator Facility (CEBAF) to organize this special event as part of the conference. The activities were coordinated by two CEBAF staff members, Karen Hokansson and Dr. Bill Williams. Thirty teachers attended from the Virginia Tidewater area.

In the morning the teachers attended the Plenary Session DNP meeting which consisted of eight speakers presenting on the subject, "Future Opportunities in Nuclear Physics." Following this session, a special luncheon was arranged for the teachers with DNP physicists. After lunch the teachers attended a session designed specifically for them. Dr. Ramon Lopez, APS Committee on Education presented,

"Issues in Science Education Reform Today." The Associate Director of CEBAF, Dr. Beverly Hartline, provided an overview of "The CEBAF Laboratory." Next, Drs. Randall Caton, Antonio Siochi, and Liz Li engaged the participants in an activity, "Hands On Science: Design Challenges in the Classroom." The session closed with an evaluation and the raffling of a modem. Several teachers ended the day by attending a reception tour at CEBAF.

In summary the following comments from the evaluation best express the teachers' reaction to the day:

"Thank you for lunch. I was able to talk with one physicist from CEBAF Hall C and a graduate assistant/researcher scientist from Louisiana. It was a terrific opportunity to associate with other educators and research scientists. This type of opportunity to learn is always a morale booster and directly affects my attitude toward teaching my students."

"I feel that this day was very informative and should be continued. The opportunity to interact with research scientists was refreshing."

### **3. SPRING APS MEETING, WASHINGTON, D.C., 18-21 APRIL 1995**

The 1995 APS Spring Meeting will be held in Washington, D.C., 18-21 April at the Ramada Renaissance Techworld Hotel. The Division of Nuclear Physics will organize five DNP sessions and six joint sessions of invited papers for the Spring meeting. Speakers for one of these sessions will be selected by vote of the Program Committee from nominations which were submitted to J. D. Walecka by the 3 November deadline. Included in the voted sessions will be the Bonner Prize winner's talk.

In order to give the DNP membership an opportunity to hear and respond to the Interim Report, it was decided to devote the second "voted" session to a presentation of the Interim Report on the new Long Range Plan. See Item 12 for more information.

Speakers for the three "topical" sessions are being arranged by subcommittees on topics selected at the Williamsburg Program Committee meeting. One session on "*Cosmology, Heavy-Ion Colliders, and Phases of Matter*", is being organized by J. Kapusta, E. Shuryak, and C. Dover. A second session on "*The Physics of Large Nuclear Deformation*" is being organized by L. Riedinger and B. Barrett. The third session on "*Probing Nuclear Matter with Heavy Ions: From Low to High Densities*" is being organized by P. D. Cottle, B. M. Sherrill, and S. G. Steadman.

In addition to the usual five invited sessions, the DNP Program Committee is participating in six cooperative or joint sessions with other APS subunits participating in the spring meeting. The joint session with the Division of Particles and Fields (DPF) is being organized by F. T. Avignone. The joint session with the Division of Beam Physics (DBP) is being organized by Brad Sherrill. The joint session with the Division of Astrophysics (DAP), on "Cosmic Rays" is being organized by K. Lesko and S. Freedman. The joint session with the Precision Measurements and Fundamental Constants Topical Group (TGPMFC) on "*Low Energy Beta Decay as a Test of the Standard Model*" is being organized by E. Adelberger and W. C. Haxton. The joint session with the Few Body Systems Topical Group (FBSTG) on "*Recent Advances in the Few Nucleon System*" is being organized by R. Milner. The joint session with the Division of Atomic and Molecular Physics (DAMOP) is

being organized by S. Steadman. These sessions are all being coordinated by the DNP Program Chair, J. D. Walecka.

In addition, a memorial session in honor of Julian Schwinger will be organized jointly by the Division of Particles and Fields and the Division of Nuclear Physics. The DNP organizer is Herman Feshbach.

#### 4. TUTORIALS FOR THE APS SPRING MEETING AT WASHINGTON, D.C., MONDAY, 17 APRIL 1995

*Who should attend:* This course is intended to acquaint scientists with recent key developments and frontier research areas in nuclear physics. The presentation will be pedagogical and is intended for young scientists, including graduate students and postdoctoral appointees, as well as senior scientists who would like to learn about a new field.

*Topic 1:* Electron scattering and the nuclear charge and current densities; extending the power of electron scattering through coincidence experiments; the determination of weak neutral current densities from parity violating electron scattering; examples of applications of electron scattering to open problems in nuclear physics.

*Instructor:* Lawrence Cardman is the Deputy Associate Director for Physics at the Continuous Electron Beam Accelerator Facility. His research interests are in nuclear and nucleon structure, the electromagnetic interaction, and accelerator physics.

*Topic 2:* Quantum chromodynamics at finite temperature and density; behavior of matter below and above a deconfinement/chiral symmetry restoring phase transition or crossover. Dynamics of

nucleus-nucleus collisions at Brookhaven's AGS and RHIC and at CERN's SPS and LHC; how to make connections between experiments performed at these accelerators and theoretical calculations for idealized systems of thermalized matter.

*Instructor:* Joe Kapusta is a Professor of Physics at the University of Minnesota. His research interests include the study of field theories, such as QCD and electro-weak, at finite temperature and density, and the application of these theories to high energy nucleus-nucleus collisions and cosmological phase transitions.

*Topic 3:* Dynamics of Hadronic Matter: Hadronic interactions at low energy; relativistic mean-field theory of nuclei; constraints from chiral symmetry. Properties of hot, dense, hadronic matter and their determinations from nucleus-nucleus collisions; theoretical interpretation of experiments.

*Instructor:* Brian Serot is a Professor of Physics at Indiana University and the Director of the IU Nuclear Theory Center. His principal research interests include relativistic many-body theory and its application to nuclear structure and reactions.

#### 5. DNP FALL MEETING AT BLOOMINGTON, IN, 25-28 OCTOBER 1995, J. M. CAMERON

The annual fall meeting of the Division of Nuclear Physics, including associated workshops, will be held 25-28 October 1995, at the Indiana University Memorial Union in Bloomington. The Union is centered in the middle of the beautiful woodland campus of Indiana University.

In addition to the Cyclotron Facility, the campus is renowned for its music and arts programs. Both classical and jazz concerts and the usual Saturday night opera are options for those who would like a sample of these. There will be tours of IUCF on Wednesday and Thursday evenings.

The local committee is planning an invited session on axial currents in nuclei. Topics will include beta decay, charge exchange reactions, threshold pion production, and related topics. There will also be the now traditional physics workshops on Wednesday. In addition, the committee is also proposing a special workshop on graduate education in nuclear physics to address the changing needs of, and opportunities for, our graduate students.

## 6. FUTURE DNP FALL MEETINGS

The present schedule for fall meetings is as follows:

1995	October 25-28 Bloomington, IN
1996	October 2-5 Cambridge, MA
1997	October Vancouver, B.C.
1998	October Santa Fe, NM
1999	October Asilomar, CA

The dates include the Wednesday "workshops", which are held in conjunction with the DNP fall meetings. Holding "workshops" at the DNP fall meetings is a tradition that began with the 1986 Vancouver meeting. All meeting attendees are welcome and encouraged to come. It has been the intention of the DNP Executive Committees that these "workshops" should have broad appeal, with introductory pedagogical talks for the benefit of those who have come primarily for the DNP meeting but want

to take the opportunity to learn about a field of specialty of the local community.

## 7. FUTURE OF THE GENERAL APS SPRING MEETING, N. BENCZER-KOLLER

This report is on the conclusions reached by the APS Task Force on Meetings together with the representatives from all APS units concerning the future of the General APS Spring Meeting. There has been considerable discussion at the APS on the viability of the General Spring Meeting normally held in Washington in April. Over the years, the ratio of contributed to invited papers and the attendance have decreased sharply while the meeting costs have escalated. The Task Force on Meetings and Program Committee Chairs of Divisions and other APS units have met several times in order to find a remedy.

The possibility of combining the March and April General meetings has been examined, but the Executive Committee of the Division of Nuclear Physics as well as those of other units and divisions participating in the April meeting have been strongly opposed to the idea. As a solution, it was proposed to alternate the meeting between Washington and another location in the Midwest away from a major metropolis. In particular, the 1995 and 1997 meetings will take place in the Washington area. The 1996 meeting will take place in Indianapolis and the 1998 meeting will go to another location in the Midwest. The Centennial Meeting in March 1999 will be in Atlanta.

The Division of Nuclear Physics participates in two meetings per year in the Spring and the Fall. These are very different from each other. While the Fall meeting is a smaller one, where only our Division is present, the Spring meeting is a



general meeting, where several other units with whom we share common interests participate. The meeting presents many outstanding intellectual opportunities through the "joint" sessions organized by the DNP together with other units. A suggestion was made to stimulate "focused" sessions of contributed papers together, perhaps, with an introductory longer "overview" presentation on a topic of current interest. These sessions would be organized as a whole by a proponent. This procedure would have the additional beneficial effect of attracting people to the meeting who might otherwise not have attended.

If we want to preserve the cultural diversity provided by the Spring meeting, we should make every effort to increase our attendance and participate in the special activities of this particular meeting. The APS is committed to enhance student participation by helping organize tutorials and workshops, as well as forums on diverse career choices and placement. Interactions with local educational facilities from high schools and small colleges will be encouraged. The meeting organizers will also be advised on means to increase interactions with industrial physicists and highlight the applications of our field to societal problems.

We are looking forward to seeing many of you at the 1995 Washington meeting!

## **8. NOMINATIONS FOR APS FELLOWSHIP**

The procedure for the election of a Member to Fellowship is outlined in the Membership Directory of the APS under "Constitution and Bylaws." A nomination form, which cites the principal contributions of the candidates to physics, should be prepared and signed by two

members of the society. The total number of members who could be elected to Fellowship in a given year is one half of one percent of the total APS membership.

The DNP deadline is normally *1 April*. Nomination forms are available from Peggye Mendoza, The American Physical Society, One Physics Ellipse, College Park, MD 20740-3843. Completed forms should be returned to Dr. J. Franz at the same address.

The 1995 DNP Fellowship Committee is comprised of Noemie Benczer-Koller (Chair), J. Matthews, S. J. Freedman and J. Ginocchio. The Fellowship Committee reviews the nominations for APS fellowship referred to the DNP and recommends a slate of candidates which is forwarded to the DNP Executive Committee and then to APS Council for approval.

It is particularly important for nominators to ensure that the cases which they prepare for the Fellowship Committee are well documented. In addition to that requested on the nomination form, information such as lists of invited talks, awards, professional activities, committee services, and participation in organization of conferences is very helpful. Inclusion of a complete publication list is highly recommended.

The DNP has adopted the following Fellowship Criteria Guidelines. To be chosen as a Fellow, an APS member should have a record of excellence in research that has been sustained over several years, and have done at least one major, original work that has influenced his/her specialty in a significant way.

The list of APS Fellows (by APS subunit) elected in a given year is published in the March issue of APS News.

The names of newly elected DNP Fellows are published in the February newsletter and the awards are presented at the DNP Business meeting of the Spring APS meeting.

#### **9. BONNER PRIZE FUNDING, N. BENCZER-KOLLER**

This annual prize was established in 1964 as a memorial to Tom W. Bonner by his friends, students and associates. Previous winners are: H. H. Barschall, R.J. Van de Graaff, C. C. Lauritsen, R. G. Herb, G. Breit, W. A. Fowler, M. Goldhaber, J. D. Anderson and D. Robson, H. Feshbach, D. H. Wilkinson, C. S. Wu, J. P. Schiffer, S. T. Butler and G. R. Satchler, S. Polikanov and V. M. Strutinsky, Roy Middleton and W. Haerberli, R. M. Diamond and F. S. Stephens, B. L. Cohen, G. E. Brown, C. D. Goodman, H. A. Enge, E. G. Adelberger, L. M. Bollinger, B. Frois and I Sick, R. H. Davis, E. M. Henley, V. W. Hughes, P. Twin, H. G. Blosser and R. E. Pollock, A. Arima and F. Iachello, and E. K. Warburton.

The purpose of this prize, which currently consists of \$5,000 and a certificate citing the recipient's contributions, is "*To recognize and encourage outstanding experimental research in nuclear physics, including the development of a method, technique, or device that significantly contributes in a general way to nuclear physics research*".

Nominations are open to physicists whose work in nuclear physics is primarily experimental, but a particularly outstanding piece of theoretical work will take precedence over experimental work. There are no time limitations on when the work was performed. The prize shall ordinarily be awarded to one person but a prize may be shared among recipients

when all the recipients have contributed to the same accomplishment(s).

The recent fund-raising for the Tom W. Bonner Prize has been successful, thanks to generous contributions from individuals and major laboratories. The prize's endowment is now sufficient to maintain it as a self-sustaining operation. All contributors to our recent drive are listed on the chart enclosed with this newsletter. However, if we have inadvertently omitted a donor in this list, please accept our apologies and let us know so that we can properly acknowledge your contribution.

On behalf of the Division of Nuclear Physics we thank all who have contributed to maintaining the viability of the Bonner Prize and the encouragement and visibility it provides to the nuclear physics community.

#### **10. PHYSICS NEWS IN 94, J. D. WALECKA**

Four nuclear physics topics of very high current interest were selected for inclusion in Physics News in 1994. These will appear in a future issue of APS News. One topic was "*A High-Performance Electron Accelerator for Nuclear Physics Research on Cost and Schedule*," H. Grunder. A second topic was "*Laser Trapping of Radioactive Atoms*," S. Freeman. A third topic was "*Gammasphere and High-Spin Rotational States*," F. Stephens. A fourth topic was "*Discovery of Doubly Magic Tin-100*," J. Kapusta.

#### **11. BUDGET UPDATE FROM THE NUCLEAR SCIENCE RESOURCES COMMITTEE, L.L. RIEDINGER, CHAIR**

The appropriations bills for the funding of nuclear physics have been passed for both

the Department of Energy and the National Science Foundation. The FY95 DOE request for Nuclear Physics was \$300.8M, down from the FY94 appropriation of \$349M. As was the case last year, Congress has added substantially to this very low request and approved an FY95 budget of \$334.7M for nuclear physics, less a \$3M piece of the mandated general reduction. This \$34M addition to the DOE request was specifically identified for CEBAF (an extra \$8.9M to allow the beginning of operations), LAMPF (\$24M to continue operations for another year), and Bates (an additional \$1M for enhanced operations). This still represents a decrease in funding for nuclear physics, including a roughly 3% reduction in research support.

The enacted budget for National Science Foundation is \$3395.6M, 13.8% over the FY94 enacted level. Research and Related Activities receives \$2280M, a 5.4% increase over the FY94 level. The Education and Human Resources program total is \$606M, up 6.4%. Academic Research Infrastructure Modernization is funded at \$250M, up greatly from the \$105M level last year. This overall is an excellent increase in budget for the NSF, indeed the largest within the VA, HUD, and Independent Agencies appropriations bill. However, all increases within research are tied to "strategic" areas (high-performance computing, biotechnology, advanced materials, global change, etc.), which cover perhaps only 15% of the physics program (chemistry is roughly half strategic, mathematics 40%, astronomy nearly zero). Considering other taxes and constraints within the foundation, the physics budget is likely to be flat.

The biggest increase in the civilian R&D sector of the budget was given to the National Institute for Standards and Technology (NIST), a 64% boost to \$855M. Within this, the Advanced Technology

Program more than doubled in funding over FY94 to \$431M. The goal of this program is to help companies adopt and commercialize new technologies. An area headed in the opposite funding direction is the university research effort in the Department of Defense, which dropped by \$200M from \$1.8B after a much bigger proposed cut in the House.

In early August, the Clinton Administration released its new plan for science in the U.S. in a document called "Science in the National Interest". Science is called the essential fuel for technology, which is the engine for economic growth. There are five goals established for scientific research: (1) maintain leadership across the frontiers of scientific knowledge; (2) enhance connections between fundamental research and national goals; (3) stimulate partnerships that promote investments in fundamental science and engineering and effective use of physical, human, and financial resources; (4) produce the finest scientists and engineers for the 21st century; (5) raise scientific and technological literacy for all Americans. The hope is that this will lead to consistent support for fundamental research in the various agencies of the federal government.

The political earthquake that occurred on November 8 is bound to have some impact on all of the above, both the outcome of FY96 funding bills next spring and summer, and also concrete responses to the science plan. It is far too early to know the nature of the changes that are likely to occur.

## **12. NSAC REPORT, J. D. WALECKA**

NSAC met on Wednesday, 26 October 1994 in Williamsburg. The topics on the agenda included status reports on the DOE and NSF Nuclear Physics budget prospects, a discussion of plans for the development of the next Long Range Plan for Nuclear Science, and plans for additional capital equipment for the RHIC project.

The charge to NSAC for the new long range plan is included at the end of this newsletter item. Note that the DNP is explicitly mentioned in this charge. It was decided that NSAC/DNP would again jointly sponsor town meetings, in January, on the following topics: electromagnetic probes; intermediate and high energy hadronic probes; radioactive beams, nuclear structure, and low energy nuclear physics; high energy heavy ions; electroweak interactions, astrophysics, and non-accelerator experiments; and theory. Conveners for these town meetings will be named, and assignments and criteria developed, by the end of the next NSAC meeting in Washington, D.C. now scheduled for November 30-December 1, 1994. In February there will be an NSAC meeting at which working group reports and facility reports will be examined and plans made for a several-day meeting of the long range plan working group, to be named, which will take place in March. The recommendations in the long range plan will be presented to the community at the APS meeting in Washington in April, before an interim report is submitted to the agencies. The agencies are requesting an interim report at that time in order to maximize input for the budget process. The final version of the long range plan will then be prepared in early summer. Time is short, but community involvement and consensus in these long range planning activities has been vital to the health of our field. You are all urged to participate and provide your input.

As to the RHIC proposal, there is a request for an additional \$42M in equipment money. To quote from the charge to NSAC on this matter "Within the RHIC Project \$112M is allocated for detectors, which includes two large detectors (STAR and PHENIX), a complement of small detectors, the costs of conventional facilities and

technical support during construction. Both STAR and PHENIX have been designed to have physics capabilities beyond those which can be achieved with the baseline construction funds; i.e., each has begun construction with a minimal configuration to begin a research effort when RHIC turns on, and each has a clearly defined improvement path requiring additional detector equipment". NSAC will appoint a subcommittee to examine this proposal, considering technical and scientific reviews, as available, which will report back to NSAC by March 1, 1995. Advice on proceeding with this funding should then be consistent with the scientific priorities in the long range plan.

Following is the charge letter to NSAC for the new long range plan:

NATIONAL SCIENCE  
FOUNDATION  
4201 Wilson Boulevard  
Arlington, Virginia 22230

Prof. Ernest J. Moniz, Chairman  
DOE/NSF Nuclear Science  
Advisory Committee  
Department of Physics  
Massachusetts Institute of  
Technology  
Cambridge, MA 02139

Dear Professor Moniz,

This letter is a request that the DOE/NSF Nuclear Science Advisory Committee (NSAC) conduct a new study of scientific opportunities and priorities in U.S. nuclear physics research and that NSAC recommend a long range plan which will again provide a framework for coordinated advancement of the nation's nuclear research

programs over the next decade. Please submit an interim report containing the essential components of your recommendations to the Department of Energy and the National Science Foundation by April 15, 1995 and your final report by September 1, 1995.

Nuclear science has made impressive progress since the 1989 Long Range Plan was submitted to the agencies. Significant new capabilities have been realized or are near completion at CEBAF, MIT/Bates, MSU/NSCL, IUCF, BNL, ORNL/RIB, Argonne, LBL, and elsewhere. RHIC is under construction and scheduled for completion in 1999. Major new detectors such as SNO, Gammasphere, Hermes, Borexino, and others will open new horizons in nuclear physics. Also, a vigorous new national Nuclear Theory Institute has been established. With these initiatives as starting points, the challenge facing the community and the agencies is how to structure the support for nuclear science to best capitalize on the investment in these new instruments and in the scientists that use them within the budget profiles provided by the agencies.

The new NSAC plan should identify the most important scientific opportunities that can be attacked over the next decade and should address the question of what new tools will be needed in the years ahead. To maintain

the U.S. position of leadership, the facilities available in other nations should be taken into consideration, and the new NSAC plan should point out opportunities for cooperation with other countries on projects of mutual interest.

An important dimension of your plan should be the role of nuclear physics in advancing the national interest and how mutually beneficial interactions with neighboring basic and applied disciplines can be strengthened. Towards this end we encourage NSAC to enlist the help of the U.S. educational community and the industrial sector. Nuclear physics priorities, while predicated on scientific excellence, must also continue to reflect broad national goals.

Education of young scientists is central to the mission of both agencies. We ask that NSAC evaluate the future need for graduate education in nuclear physics. In so doing, please document the impact that education in nuclear physics has had on academia, industry, medicine, and other relevant sectors of economic and/or societal importance. While most research expenditures are intimately tied to graduate level education, education at other levels is also very important; and impacts here should be documented as well. Possible changes in the educational content of NSF and DOE programs to meet changing expectations and needs should also be evaluated.

The Division of Nuclear Physics of the American Physics Society (DNP/APS) was instrumental in obtaining broad community input by organizing town meetings of different nuclear physics sub-disciplines as input

to the 1989 Long Range Plan. We encourage NSAC to exploit this method of obtaining widespread input again, and to further engage the DNP/APS in laying out the broader issues of contributions of nuclear physics research to society.

Your planning should lead to a coordinated long range plan for the synergistic DOE and NSF programs in nuclear physics, recognizing DOE's lead role in building and operating forefront national facilities for users, and recognizing the important stewardship role which both agencies play in university-based research. To be most helpful, the plan should reflect the budget context within the two agencies. For DOE, you should provide advice for funding levels at \$325 million and at \$350 million for FY 1997, with following years to be at a constant level of effort from the FY 1997 base. These levels do not include primary responsibility for operation of the LAMPF accelerator. For FY 1996, assume a reasonable transition between the FY 1995 level of \$331.5 million and the FY 1997 level. For NSF, the overall funding level for research and related activities is expected to be highly constrained for the next five years. Nevertheless, for purpose of planning, you should assume that NSF support for nuclear science will be approximately a constant level of effort starting from the actual FY 1994 budget.

The agencies very much appreciate NSAC's willingness to undertake this important task and your leadership in the process; and we will assist you as needed. The effort on the part of many people will be great, but the importance of this work to the future of nuclear research in the United States is also great.

Sincerely yours,

Martha Krebs  
William C. Harris  
Director, Office of Research  
Assistant Director  
U.S. Department of Energy  
National Science Foundation

### **13. CONVENERS FOR LRP TOWN MEETING, E. MONIZ, NSAC CHAIR**

There will be three conveners for each town meeting area, one of whom is an NSAC member. The NSAC member in each area is the following:

1. Electromagnetic Probes (Cardman)
2. Intermediate and High Energy Hadron Probes (Vigdor)
3. Radioactive Beams, Nuclear Structure and Low Energy Nuclear Physics (Howell)
4. High Energy Heavy Ions (Harris)
5. Electroweak Interactions, Astrophysics, and Non-Accelerator Experiments (Bowman)
6. Theory (Mueller)

The other conveners are in the process of being named.

### **14. THE DNP BROCHURE, "NUCLEAR PHYSICS: BASIC RESEARCH SERVING SOCIETY"**

Finally it's finished! A copy of the DNP Brochure is enclosed with this newsletter. The brochure took about a year longer than anticipated to produce. Hopefully, it will help us to inform members of Congress and the general public about the benefits that accrue from the support for basic research and nuclear science in particular.

Many members of the DNP plus a number of other people contributed to the brochure either by writing pieces, reading sections carefully and critically, or by

supplying photographs. A small committee of present and past officers of the Division, Virginia R. Brown, Wick C. Haxton, Noemie Benczer-Koller, Carl B. Dover, and in particular Gary M. Crawley, who chaired the committee, took the main responsibility for the brochure. Kevin Lesko and Lee Schroeder deserve special thanks for important contributions, including discussion and writing. The other essential person was Donn Forbes who was hired to edit the document and did everything from writing and editing to layout and gathering photographs. Donn also furnished a "lay" perspective which helped save us from becoming too technical and resorting to too much jargon.

Three hundred copies of the brochure were made available at the 1994 DNP Fall meeting in Williamsburg VA, and these all quickly disappeared. In addition to all DNP members, copies will be mailed to several hundred physics department chairs and to all members of the U. S. Congress (House of Representatives and Senate). DNP members are encouraged to write for additional copies to present to members of their university administration and to their colleagues in industry.

Members are also encouraged to carry copies of the brochure to their Senate and House Congressional Representatives when those representatives are back in their home states. The Executive Committee of the DNP will also carry copies to the NSF, DOE, and members and staff of selected Congressional committees.

Additional copies of the brochure are available from Shari Conroy of the NSCL at Michigan State University. She can be reached by e-mail at "conroy@nscl.nsl.msu.edu".

## 15. ANNUAL REVIEWS OF NUCLEAR AND PARTICLE SCIENCE

The Division has continued the agreement with Annual Reviews, Inc., which will enable DNP members to obtain copies of the "*Annual Review of Nuclear and Particle Science*" at a 30% discount when purchased through the DNP Secretary-Treasurer, Virginia R. Brown, Lawrence Livermore National Laboratory, P. O. Box 808, L-288, Livermore, CA 94550.

**1994-95 Prices:** The dual prices (separated by a slash) listed below correspond to USA/other countries including Canada. Volumes 12-41 are \$55/\$60 retail and \$39/\$42 for DNP members. Volumes 42 and 43 are \$59/\$64 retail and \$42/\$45 for DNP members. Volume 44 (Dec. 1994) is \$62/\$67 retail and \$44/\$47 for DNP members.

Other Annual Reviews are also available. Payment (payable to the Division of Nuclear Physics-APS) must accompany your order and must be in U.S. funds. California orders must add applicable sales tax. *Since 1 January 1991, all orders shipped to Canada require the addition of a 7% General Sales Tax.*

## 16. INTERNATIONAL COLLABORATION, H. FESHBACH, MIT

On December 8 and December 9, a unique meeting sponsored by ICHIA (International Committee on High Intensity Accelerators), a committee of Commission C12, will be held in Amsterdam. The attendees are the officials in charge of the support of nuclear science research in 22 countries together with representatives from IUPAP, UNESCO, and the OECD. The goal is to develop a framework for international cooperation. But in addition, it will provide

a forum in which dialog among the policy makers and between the policy makers and scientists can take place, leading hopefully to a more effective use of the resources available to the nuclear physics community. The U.S. delegates are Dr. J. Decker and Dr. D. Hendrie from the DOE and Dr. K. Erb and Dr. J. Lightbody from the NSF. The countries sending delegates include U.S.A., Canada, Brazil and Mexico, France, Germany, Italy, Russia, the Czech Republic, Portugal, Belgium, the Netherlands, Denmark, Sweden, Great Britain, Greece, India, Israel, the Peoples Republic of China, Japan, Taiwan, and Australia. Representatives of IUPAP, OECD, UNESCO, and the European Science Foundation will also attend.

The program consists of two parts. One presents the leading scientific issues. This was arranged by E. Moniz, Chair of NSAC and P. Kienle, President of NuPeCC. The second part is devoted to policy issues and a consideration of possible arrangements which will further international cooperation at the support level.

## 17. FUTURE CONFERENCES

Organizers of future conferences should contact the DNP Secretary-Treasurer if they wish their conferences listed in DNP newsletters.

***"Quark Matter '95, The Eleventh International Conference on Ultra-Relativistic Nucleus-Nucleus Collisions"***, to be held 9-13 January 1995, in Monterey, CA, USA. [For further information contact: Art Poskanzer, Building 50-D, Lawrence Berkeley Laboratory, Berkeley, CA 94720, phone: (510) 486-5618, fax: (510) 486-4818, internet: "QM95@LBL.gov"].

***"Californium-252 Users' Workshop"***, to be held 17-20 April 1995, at Oak Ridge

National Laboratory, Oak Ridge, TN. [For further information contact: Mr. C. W. Alexander, Oak Ridge National Laboratory, Oak Ridge, TN 37831, phone: (615) 574-7071, fax: (615) 574-6008, e-mail: "alexandercw@ornl.gov".

***"Real-Time Computer Applications in Nuclear, Particle and Plasma Physics (RT-95)"***, to be held 22-26 May 1995 at Michigan State University, East Lansing, MI. [For further information contact: Ron Fox, NSCL, Michigan State University, East Lansing, MI 48824-1321, phone: (517) 333-6349, fax: (517) 353-5967, e-mail: "fox@foxsun.nsl.msu.edu"]

***"Joint Meeting with CAP (Canada) and SMF (Mexico)"***, to be held 11-16 June 1995, Quebec City, Quebec, Canada. Abstract deadline: 2/28/95. [For further information contact: Francine Ford, Canadian Association of Physicists, Suite 903, 151 Slater Street, Ottawa, Ontario K1P 5H3, phone: (613) 237-3392, fax: (613) 238-1677, e-mail: "cap@physics.carleton.ca"].

***"1995 Gordon Research Conference on Nuclear Chemistry"***, to be held 18-23 June 1995, Colby-Sawyer College, New London, New Hampshire. The focus of the conference will be on nuclear structure studies. [For further information contact: W. Nazarewicz, Joint Institute for Heavy Ion Research, Oak Ridge National Laboratory, Bldg. 6998, MS6374, P. O. Box 2008, Oak Ridge, TN 37831, phone: (615) 574-4580, fax: (615) 576-5780, e-mail: "witek@utkvox.utk.edu"].

***"Sixth International Symposium on Meson-Nucleon Physics and the Structure of the Nucleon"*** to be held 10-14 July 1995, in Blaubeuren, Germany. [For further information contact: Gerhard J. Wagner (Chairman), Ralph Bilger (Contact), Physikalisches Institut, Universitaet



Tuebingen, D-72076 Tuebingen, phone: +49-7071-296304/296297, fax: +49-7071-296296, e-mail: "me\_nu95@pit.physik.uni-tuebingen.de"].

**"1995 Gordon Conference on Nuclear Physics"** to be held 24-28 July 1995, at the Tilton School, Tilton, New Hampshire. The focus of this conference will be on electromagnetic physics, relativistic heavy ion collisions, and astrophysics. [For further information contact: A.B. Balantekin, U. Wisconsin, Physics Dept., 1150 University Avenue, Madison, WI 53706, phone: (608) 263-7931, fax: (608) 262-8628, e-mail: "baha@wisnud.physics.wisc.edu"].

**"International Nuclear Physics Conference (INPC '95)** to be held 21-26 August 1995, in Beijing, China. [For further information contact: Prof. Xu Jincheng (Secretary), China Institute of Atomic Energy, P. O. Box 275 (80), Beijing 102413, People's Republic of China, phone: 86-1-9357787, fax: 86-1-9357008, e-mail: "ciaednp@oxihep.ihep.cern.ch"].

**"7th International Conference on the Structure of Baryons"**, 3-7 October 1995, to be held in Santa Fe, New Mexico. [For further information contact: Lenora Alsbrook, Baryons '95 Conference Coordinator, Los Alamos National Laboratory, Protocol Office, MS P366, Los Alamos, NM 87545, phone: (505) 667-8449, fax: (505) 667-7530, e-mail: "baryons@lampf.lanl.gov"].

**"9th International Symposium on Capture Gamma-Ray Spectroscopy and Related Topics"**, 8-12 October 1996, to be held in Budapest, Hungary. [For further information contact: G. Molnar, Nuclear Physics Department, Institute of Isotopes, POB77, H-1525 Budapest, Hungary, phone: 36-1-275-4347, fax: 36-1-275-4349, e-mail: "molnar@iserv.iki.kfki.hu"].

## Biographies

### Vice-Chair

**BUNNY C. CLARK** - Distinguished University Professor, Department of Physics, The Ohio State University, (1989-present); Professor (1987-1989); Associate Professor (1983-1987); Assistant Professor (1981-1983); Senior Research Scientist (1977-1981); Research Scientist (1969-1977); Senior Research Scientist General Motors Research Laboratory (1960-1969); B.S. Physics and Math, (1959); M.S. in Physics (1963), Kansas State Univ.; 1963, PhD. Theoretical Physics, Wayne State Univ. (1973); Ed. Board, Physical Review C, 1984-1986; Ed. Board, American Journal of Physics Resources Letters; Fellow American Physical Society; Chair, APS Committee on the Status of Women in Physics (1991-1994); Member, DNP Executive Committee (1989-1991); Member, Nuclear Science Advisory Committee (1986-1989); Member, APS Fellowship Committee (1991-present); Member, DNP Nuclear Science Resources Committee (1984-1986); University Distinguished Affirmative Action Award, 1989; University Distinguished Research Award 1983; YWCA Woman of Achievement, 1993; Ohio Section Representative to the Council of the American Physical Society, (1991-present); Research interests: Theoretical nuclear physics, relativistic treatments of nuclear structure and reactions, the relativistic optical model, relativistic wave equations, nuclear spin observables, Dirac phenomenology.

**DONALD F. GEESAMAN** - Senior Physicist, Argonne National Laboratory, 1976-present; B. S. Colorado School of Mines, 1971; M. A., Ph.D. Physics, SUNY - Stony Brook 1972, 1976; Fellow APS; Fellow AAAS; DOE/NSF Nuclear Science Advisory

Committee, 1989-1992; Bonner Prize Committee of DNP 1994; DNP Program Committee 1991-1992; NSAC Subcommittee on Instrumentation 1988-1989; M.I.T. Bates Program Advisory Committee 1988-1993; IUCF Program Advisory Committee 1985-1988; Board of Directors - CEBAF Users Group 1994-present; Board of Directors - M.I.T. Bates Users Group 1987-1988; Board of Directors LAMPF Users Group 1985-1986; Technical Advisory Panel Of LAMPF Users Group 1984-1985; Editorial Board of Phys. Rev. C 1987-1989; RHIC Detector Technical Advisory Committee 1991-present; Chair, Future Directions in Multi-GeV Hadron Facilities 1992-1994; AGS II Task Force 1983-1984; NSAC Long Range Plan Working Group 1983; Research Interests: Nuclear and Hadron Structure. Applications of QCD to nuclei. Deep inelastic lepton scattering from nucleons and nuclei. Electromagnetic interactions in nuclei and nuclear medium effects.

Secretary-Treasurer

**VIRGINIA R. BROWN** - Senior Staff Scientist, Lawrence Livermore National Laboratory, 1964-present; B.S. Northeastern University 1957; Ph.D. McGill University, 1964; Post Doctoral Research Appointment, Yale University, 1963-64; Post Doctoral Fellowship LLNL, 1965-67; Guest Research Position, IKP Jülich, West Germany, approximately two months per year, 1980-present; Adjunct Prof., Univ. of California at Davis; Fellow APS; Executive Committee, Division of Nuclear Physics, 1980-82; Economic Concerns Committee, APS DNP 1973-77; Asilomar DNP Meeting Organizing Committee, 1988-89, 1992-93; DNP Fall Meeting Plenary Session Committee, 1990-present; DNP Bylaws Committee, 1991-92; APS Committee on Constitution and Bylaws, 1992-94; Nuclear Physics Summer School Steering Committee, 1992-94; Secretary-Treasurer, DNP 1986-present; APS General

Councillor 1995-99. Research-theoretical nuclear physics: Neutron and proton (isospin)

nuclear structure contributions to various transitions; comparison to hadronic, weak and EM probes. Coupled-channels effects in inelastic scattering and charge exchange. The NN system in the presence of weak and electromagnetic fields.

Executive Committee

**RICHARD N. BOYD** - Professor of Physics, Professor of Astronomy, Associate Dean of the College of Mathematical and Physical Sciences, Ohio State University; B.S.E., University of Michigan, 1962; Ph.D., University of Minnesota, 1967; Postdoctoral Research Associate, Rutgers University, 1968-71; Postdoctoral Research Associate, Stanford University, 1971-72; Assistant Professor, University of Rochester, 1972-78; Associate Professor, OSU, 1978-81; Professor of Physics, OSU, 1981-present; Professor of Astronomy, OSU, 1984-present; Vice-Chair for Graduate Studies in Physics, OSU, 1993-94; Visiting Staff Member, Los Alamos National Lab, 1976-82; Consultant, Lawrence Livermore National Lab, 1986-present; Visiting Professor, University of Kansas, 1987; Visiting Lecturer, Tokyo Metropolitan University, 1990; Visiting Scientist, Institute for Physical and Chemical Research, 1990; Chair of Organizing Committee, DNP of APS Fall Meeting, 1977; Co-organizer, International Conference on Radioactive Ion Beams and Small Cross Sections, 1981; Member, Subcommittee for Review of Nuclear Science for the NSF Advisory Committee for Physics, 1982; Member of Organizing Committee, Cretan International Conference on Subatomic Physics, 1985; Organizer, Symposium on Impact of Radioactive Nuclei on Astrophysics (AAS), 1992; Member of Program Advisory Committee, Indiana University Cyclotron

Facility, 1984-87; OSU Distinguished Research Award, 1982; Fellow of APS, 1988. Current research interests: nuclear reactions on short-lived nuclei in primordial nucleosynthesis; studies of stellar nucleosynthesis of p-process nuclides; nucleosynthesis near active galactic nuclei and bursters; effects of galactic chemical evolution on big bang abundances; nuclear physics with radioactive nuclear beams; searches for exotic forms of matter.

**WARREN W. BUCK** - Professor of Physics, Hampton University, 1989-present; Associate Professor of Physics, Hampton University, 1984-89; Research Scientist, Orsay, France, 1979-80; Post Doctoral Fellow, Stony Brook, 1976-79; Ph. D. - theoretical nuclear physics, William and Mary, 1976; Visiting Staff Scientist, Los Alamos National Laboratory, 1977-79; Associate Member of the CEBAF Theory Group, 1984-present; Yachtsman/Artist, 1980-83; Visiting Assistant Professor of Physics, The College of William and Mary, 1983-84; Physicist, NASA/LaRC, summer 1985; Director of the NSF Nuclear/High Energy Physics (NuHEP) Research Center of Excellence, Hampton University, 1991-present; Visiting Professor, Michigan State University, summer 1992; Advisor to the CEBAF Director, 1992-present; Director of the HUGS at CEBAF Summer School, 1986-present; CEBAF Users Group Board of Directors (1994-96); APS Committee on Education 1990-93 (Chairman 1993); AIP Education and Statistics Division Advisory Committee (1993-95); played major role in the establishing of the Ph. D. degree offering in physics at Hampton University, 1991-present; charter member of Tidewater Physics Consortium, 1992- present; Research Interests - nuclear and subnuclear physics, relativistic few body systems, strong and electromagnetic interactions.

**JOSEPH KAPUSTA** - Professor of Physics at the University of Minnesota. PhD from

the University of California at Berkeley in 1978. Research Associateships at Lawrence Berkeley Laboratory, Los Alamos National Laboratory, and CERN before joining the faculty at Minnesota in 1982. Organizer of the Theoretical Physics Institute Workshop *High Temperature QCD and Relativistic Many-Body Theory* in 1987; co-organizer of the *Winter Workshop on Nuclear Dynamics* in 1988, 1990 and 1991; co-organizer of the Pittsburgh Workshop on *Soft Lepton Pair and Soft Photon Production* in 1990; co-organizer of the program *Strong Interactions at Finite Temperature* at the Institute for Theoretical Physics in Santa Barbara in the fall of 1993. Program Advisory Committees at Lawrence Berkeley Laboratory (1986-88) and at Brookhaven National Laboratory (1993 - present). DOE Nuclear Theory Review Panel in 1987. Program Committee for the DNP of the APS (1994 - present). Fellow of the American Physical Society. George Taylor/Institute of Technology Alumni Society Research Award. Author of *Finite Temperature Field Theory*, Cambridge University Press (1989). Research interests include the study of QCD, effective hadronic field theories, and electro-weak theory at finite temperature and density, and the application of these theories to high energy nucleus-nucleus collisions, neutron stars, and cosmological phase transitions.

**BARBARA V. JACAK** - Staff Member, Los Alamos National Laboratory (1987-present); Adjunct Professor of Physics, University of New Mexico (1994-); J.R. Oppenheimer Fellow, Los Alamos National Laboratory (1984-1987); Ph.D., Michigan State University (1984); Research Assistant, GSI (1980); B.S., University of California at Berkeley (1979); Member APS, ACS, Phi Beta Kappa; PHENIX Experiment Detector Council (1992-present), PHENIX Experiment Executive Council (1994-); Organizing Committee of APS DPF Meeting, August 1994; Organizing Committee of Santa Fe Summer Workshop

on QCD and RHIC Physics (1993,1994); Organizing Committee of Intersections Between Particle and Nuclear Physics (1991); Laboratory Directed Research Review Committee, Los Alamos National Laboratory (1989-1993, Nuclear and Particle Physics Chair 1994); Recipient, Charles D. Coryell Award in Nuclear Chemistry (1979). Research Interests: High energy proton-nucleus and heavy ion collisions at CERN and RHIC.

**ROBERT W. LOURIE** - Associate Professor of Physics, University of Virginia (1994-present); Assistant Professor of Physics, UVa (1988-1994); Sponsored Research Staff, MIT (1986-1988); Ph.D., MIT (1986), B.S., MIT (1982); Chair, CEBAF Users Group (1992); Co-Manager Hall A at CEBAF (1988-1993); Bates Users Group Board of Directors (1990, 1994); Bates Program Advisory Committee (1994-present), Consultant to CEBAF Program Advisory Committee (1990); NSF Young Investigator (1992-present); Peter T. Demos Award, MIT-Bates Laboratory (1987); John and Fannie Hertz Foundation Fellow (1982-1986). Current research interests: Polarization studies of electromagnetic and weak structure of nucleons and few-body systems. Nucleon resonances. Many-body currents and correlations in nuclei and their investigation with electromagnetic probes.

**SHOJI NAGAMIYA** - Professor of Physics, Columbia University, 1986-present; BSc, U. Tokyo, 1967; DSc. Osaka U., 1972. Rsch Assoc U. Tokyo, 1972-75; Staff Scientist at LBL, 1975-82; Assoc. Prof. at U. Tokyo, 1982-88. Chmn., Dept. Physics, Columbia U., 1991-1994. Adj. Prof. KEK, 1985-87; Adj. Prof., INS, U. Tokyo, 1988-91; Adj. Prof. Waseda U., 1994-present. APS Fellow; Sakkokai Foundation Fellow; Nishina Scholarship Fellow, 1973. Inoue Science Prize, 1992. Editorial Bd. Jour. Phys. Soc. Japan, 1984-86; Editorial Bd. Il Nuovo Cimento A, 1989-present; Adv. Comm. J.

Physics G, 1992-present; Editor, Int. Jour. Mod. Phys. E, 1992-present. Chmn. of Nucl. Phys. Comm. of Japan, 1985-87; Mem. RHIC Policy Comm., 1985-90; Mem. LBL Vis. Comm., 1986-89; Mem. Evaluation Comm. Swedish Natural Rsch Council, 1987; Mem. ORNL Vis. Comm., 1987--1991; Chmn., Rev. Comm. Stony Brook Rad. Lab., 1988; Mem. DOE Bevalac Review Panel, 1989; Mem. AUI/BNL Vis. Comm., 1992-present; Mem. GSI Vis. Comm., 1992; Mem. Wissenschaftliche Rat. GSI, 1994-present. Chmn., Rev. Comm. KEK-PS, 1994; Mem. NSAC, 1994-present. Mem. PAC at KEK, 1982-96; Mem. PAC at BNL, 1993-present. APS-DNP Prog. Comm., 1989-90; APS-DNP Phys. News Comm., 1991. Chmn. Org. Comm. Quark Matter '88. Mem. Org. Comm. for 6 Int. Confs.; Mem. Int. Adv. Comm. for 20 Int. Confs. Co-spokesman, E802 at AGS; Spokesman, PHENIX at RHIC. Research Interests: Relativistic heavy-ion physics at the GSI, AGS, SPS and RHIC energy domains. Current interest focuses on the strangeness production and its correlations. Future interest includes lepton and photon measurements in addition to hadron measurements.