

TO: Members of the Division of Nuclear Physics, APS FROM: Benjamin F. Gibson, LANL - Secretary-Treasurer, DNP

#### ACCOMPANYING THIS NEWSLETTER:

- A ballot for the DNP Election
- A Bethe Prize Donation Form
- DNP Nuclear Wallet Cards
- Registration form for the APS

Physics and

Government Network



#### **Future Deadlines**

• 23 Jan. 1996 - Last day for Abstracts to College Park, MD,

APS Office for Spring

Meeting (See Item 3)

- 12 Jan. 1996 DNP Election Ballot (See Item 1)
- 1 April 1996 Nominations for APS Fellowship (See Item

8)

A worldwide web home page for the Division of Nuclear Physics is currently available at "http://nucth.physics.wisc.edu/dnp/". Each newsletter is posted on the web, well in advance of the copy you receive in the mail. Other information of interest to DNP members, such as deadlines for meetings, prizes, nomination forms, and special announcements are listed there as well. We have plans to post the DNP Brochure in the near future. We would like to hear your comments and suggestions. Please send them to Baha Balantekin at "dnp@nucth.physics.wisc.edu".

### 1. ELECTION OF OFFICERS AND EXECUTIVE COMMITTEE FOR 1996

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 Indianapolis, IN, 2-5 May 1996. Lee L. Riedinger will become Chair, J. Dirk Walecka will become Past-Chair, and Bunny C. Clark will become Chair-Elect. Richard N. Boyd, Barbara V. Jacak, and Joseph I. Kapusta 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 1996.

This year's Nominating Committee consists of W.F. Henning, (Chair), R.D. McKeown, P. Paul, and S.J. Seestrom. The candidates selected by the Nominating Committee are as follows:

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

Stuart J. Freedman, UC, Berkeley Robert P. Redwine, MIT

#### **Secretary-Treasurer**

Benjamin F. Gibson, LANL

#### **Executive Committee (three positions)**

Thomas J. Bowles, LANL Cathleen E. Jones, ANL Richard G. Milner, MIT Berndt Mueller, Duke Witold Nazarewicz, Univ. of Tennessee Bradley M. Sherrill, MSU

Candidate biographies are in Item 20.

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 *Benjamin F. Gibson* on or before 12 *January 1996* 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 BLOOMINGTON, IN, 25-28 OCTOBER 1995

The annual Fall Meeting of the Division of Nuclear Physics, including workshops, was held 25-28 October 1995 at the Indiana University Memorial Union in Bloomington, Indiana. The beautiful woodland campus of Indiana University was awash in fall colors and the music program associated with the renowned music school was in full swing. On behalf of the membership, the DNP Executive Committee is pleased to acknowledge the hard work, careful planning, and delightful hospitality of our hosts. Special thanks go to John Cameron, Chair of the Local Committee, and to Sharon Herzel, for the excellent organization and local arrangements. Members of the Local Committee were J. Cameron (Chair), L. Bland, R. De Souza, K. Kwiatkowski, H. Meyer, H. Nann, C. Olmer, R. Pollock, M. Snow, J. Szymanski, V. Viola and B. Serot.

Registered attendance at the Fall Meeting was 524, including 146 student, retired, or unemployed participants. A number of well attended events punctuated the main program. The plenary session was held in the Alumni Hall to accommodate the large audience. A Thursday afternoon reception tour of the IUCF drew a number of participants. The Friday afternoon Town Meeting was well attended, as has been customary. The Solarium Reception and Alumni Hall Banquet on Friday evening drew a capacity crowd, as the DNP said thanks to Virginia R. Brown, Secretary-Treasurer of the past ten years. Other meetings held in conjunction with the Fall Meeting included the successful workshops on Wednesday, an NSAC meeting on Wednesday, and eight User Group gatherings: CEBAF, the 88 Cyclotron, Atlas, NSCL, Gammasphere, RHIC/AGS, Bates, and HRIBF.

#### Meeting Program

The meeting consisted of 6 sessions of invited papers, one of which was the plenary session, and 22 sessions of approximately 200 contributed papers. The plenary session theme *nuclear* 

physics -- basic research serving society opened the fall meeting. The Local Committee organized one invited session on the Axial Current in Nuclear Systems". Two other invited sessions were on topics selected by the program Committee at the Spring Meeting of the APS in Washington, DC: Nucleon and Nuclear Structure with Electromagnetic Interactions, which was arranged by J. Dubach (Univ. Mass.) and Towards the Superheavy Elements, which was arranged by T-L. Khoo (ANL). The remaining two invited sessions on Relativistic heavy Ions and Weak Interactions and New Aspects of Nuclear Structure were selected by the DNP Program Committee from nominations made by the DNP membership at large. All of the sessions were well attended, as were the Contributed Paper Sessions, some of which overflowed into the halls.

#### Plenary Session

The Plenary Session at Bloomington focused on the subject of the nuclear physics brochure on "Basic Nuclear Science Serving Society". The Session was Chaired by J. D. Walecka and featured talks by John C. Browne, "Neutrons: Back to the Future With More Intensity", by G. A. Norton, "Application of Electrostatic Accelerators", and by Kamil Ugurbil, "Recent Developments in Magnetic Resonance Imaging".

#### Town Meeting

The Town Meeting took place on Friday afternoon. In addition to reports on the progress in Bethe prize funding, ballots for the coming officer election, and Program Committee plans for the Spring APS/AAPT Meeting in Indianapolis, a presentation to Virginia R. Brown was made by Bunny C. Clark on behalf of the Executive Committees with whom Virginia worked as the Secretary-Treasurer from 1986 until 1995 and the DNP. Significant time was devoted to providing an opportunity for a large segment of the nuclear science community to be exposed to and to contribute to arguments regarding future challenges for the field. Jack Lightbody of the NSF's Physics Division, David

Hendrie of the DOE's ER/DNP, and Hamish Robertson, the new NSAC chair, spoke and fielded questions. (See Item 8 for a report from the new NSA Chair.) Dirk Walecka summarized the effort needed to educate our congressional leaders; a registration form is included with this mailing for the APS physics and government network. Finally, an announcement relating to the new 50 GeV PS at the INS/KEK accelerator project and December workshop was made; (See Item 17 for a summary by Shoji Nagamiya).

#### Workshops

Two workshops were held on Wednesday prior to, but in conjunction with, the DNP Fall Meeting. 173 participants registered. The workshop on *Physics at the Transition* addressed issues in the regime between low-momentum transfer, where theories framed in terms of observable hadrons work well, and the perturbative regime, where hadron-hadron interactions appear to be successfully described in terms of individual hard collisions of constituent partons. A central requirement of successful models in the transition regime is that they provide a unified framework for treating the nontrivial interplay between hadron substructure and hadronic interactions. Such questions are important to the program just beginning at CEBAF and will be the core for the program at the LISS facility being proposed as the natural extension to fully exploit new techniques developed at the IUCF cooler. The workshop on Graduate Education in Nuclear Physics; Changing Goals for Changing Times addressed potential changes in graduate education of nuclear physicists to meet the challenges of tomorrow. While similar questions are being addressed in a wider context elsewhere by the APS, this workshop allowed professionals and students to discuss particular ramifications for nuclear physicists of the changing environment in which we work and live.

### 3. SPRING APS/AAPT MEETING, INDIANAPOLIS, IN, 2-5 MAY 1996

The 1996 APS/AAPT Spring Meeting will be held 2-5 May in Indianapolis, IN, at the Indiana Convention Center. The Division of Nuclear Physics will organize five DNP sessions and six joint sessions of invited papers for the Spring meeting. Six speakers for two of these sessions were selected by vote of the Program Committee from nominations which were submitted to L.L. Riedinger by the 6 October deadline. Included in the voted sessions will be the Bonner Prize winner's talk and the Graduate Student Dissertation Prize winner's talk.

Speakers for three topical sessions were arranged by the Program Committee on topics selected at the Bloomington committee meeting. One session on "Determining the Final Break-up Conditions in Nuclear Collisions" is being organized by B. Tsang, J. Kapusta, T. Hemmick, and W. Zajc. Topics include "Probing the Nuclear Liquid-Gas Phase Transition", "Break-up Conditions for Low Density Matter", "Reconstructing the Final Stage of Heavy Ion Collisions at CERN and AGS", and "Particle Distributions and Correlations from 158AGeV/c Pb+Pb Collisions". A second session on "Neutrino Oscillations in the Laboratory" is being organized by S. J. Freedman, J. Dubach, and K. Lesko. Topics include "Recent Results from LSND", "First Results from Nomad", "Long Base Line Studies with Reactors", and "The Atmospheric Neutrino Anomaly". The third session on "Radioactive Beams and Exotic *Nuclei*" is being organized by T-L. Khoo, M. Smith, and B. Tsang. Topics include "New Isotopes from Relativistic Fission of Uranium", "New Ground-State Proton Emitters", "Fusion/Evaporation Studies with Radioactive Ion Beams", "Physics with Trapped Radioactive Atoms", and possibly "Interpretation of Coulomb Dissociation".

In addition to the five DNP invited speaker sessions, the Program Committee is participating in the cooperative organization of six joint sessions with other APS subunits participating in the Spring APS/AAPT Meeting. A joint session with the Division of Particles and Fields on

"Nuclear and Particle Physics at RHIC" is being co-organized by B. Jacak. A joint session with the Division of Physics of Beams on "Challanges to Nuclear Physics Accelerators" is being co-organized by P. Schwandt. A joint session with the Few Body Systems Topical Group on "Recent Progress in Few-Body Physics" is being co-organized by D. Beck. A joint session with the Division of Astrophysics on "Stellar Explosions" is being co-organized by M. Smith. A joint session with the Division of Computational Physics on "Advances in Lattice Gauge Calculations" is being co-organized by M. Strayer, A joint session with the Forum on Industrial and Applied Physics on "Nuclear Imaging Techniques" is being co-organized by U. Garg. A joint session with the Precisions Measurements and Fundamental Constants Topical Group, which is co-organized by E. Adeleberger, has evolved into two focused sessions.

"Focussed" Sessions at the Spring Meeting

The Division of Nuclear Physics is organizing for the first time "focussed" sessions at the Spring Meeting in Indianapolis. There will be three such sessions, on the topics of "Super and hyper deformation in nuclei", "Tests of fundamental symmetries at low energies I: parity violations", and "Tests of fundamental symmetries at low energies II: time reversal violations". The latter two are being organized jointly with the Precision Measurements and Fundamental Constants Topical Group. Each "focussed" session will include one invited talk giving an overview of the topic and then contributed papers. Members interested in submitting abstracts for these sessions should make their submission at the normal time in January and mark the abstract as being part of the appropriate focused session.

4. DIVISIONAL COLLOQUIA FOR THE APS/AAPT SPRING MEETING AT INDIANAPOLIS, IN, 2-5 MAY 1996

Divisional Colloquia on Nuclear and Particle Astrophysics will be sponsored by The Division of Astrophysics, The Division of Nuclear Physics, and The Division of Particles and Fields of the APS

This colloquium on topics in nuclear and particle astrophysics will be held on Thursday evening, May 2, 1996, from 7:30-10:30 pm, during the Indianapolis Spring Meeting of the American Physical Society. It is intended to provide an introduction to three important issues in nuclear and particle astrophysics: big bang nucleosynthesis and the dark matter problem, the solar neutrino puzzle, and the microwave background as a probe of cosmological models. The lectures will be presented in the style and at the level of typical department colloquia. Thus they are intended for a general audience, including younger researchers and those who are not experts in this research area. The colloquium is free to those registered for the Spring APS/AAPT Meeting: please urge your students to take part. The speakers, David Schramm, Hamish Robertson, and Paul Steinhardt, are well known for their clarity and enthusiasm.

The scheduled program is as follows:

7:30-8:30 David Schramm University of Chicago

"Shadows of Creation: The Dark Matter of the Universe"

This talk will explore the key problems in physical cosmology today, namely the nature of the dark matter and its relation to the age of the universe and the origin of cosmic structure. The new results tightening up the need for exotic, non-baryonic, dark matter will be discussed, including the new extra galactic Keck Telescope deuterium measurements and the MACHO microlensing results. The next generation microwave background experiments will be discussed along with the current status of the age arguments.

8:30-9:30 Hamish Robertson University of Washington

"The Problem of the Missing Solar Neutrinos"

Recent results from Kamiokande, SAGE, and GALLEX, when combined with the Homestake measurements, indicate a pattern of solar neutrino fluxes that is inconsistent with the predictions of reasonable solar models. This situation and plausible particle physics solutions will be reviewed. Two new detectors that will hopefully resolve this puzzle, SNO and SuperKamiokande, are now nearing completion. A summary will be given of the important physics expected from these experiments.

9:30-10:30 Paul Steinhardt University of Pennsylvania

"Imaging the Early Universe"

This colloquium will explore how measurements of cosmic background radiation over the next decade will provide a snapshot of the early Universe. The results will allow us to test the cosmological models that have been advanced to explain the origin and evolution of galaxies and large-scale structure.

#### 5. DNP FALL MEETING AT CAMBRIDGE, MA 2-5 OCTOBER 1996, R.P. Redwine

The annual Fall Meeting of the Division of Nuclear Physics, including associated workshops, will be held 2-5 October 1996, on the campus of the Massachusetts Institute of Technology, Cambridge, Massachusetts. The Boston/Cambridge area has something for everyone with its history, cultural events, sports, nightlife, and fine ethnic restaurants. Daytime temperatures in October are generally between 50 and 70 F, and the area will be at the height of the fall foliage season. A tour of the Bates Linear Accelerator Center will be held on Thursday, October 3, 1995 and, in place of a more formal banquet, a dinner cruise of Boston Harbor is planned for Friday, October 4, 1995. The host hotel is the Boston Marriott Cambridge located within walking distance of the MIT campus. Rooms at a number of other hotels will be available as well. Roommate matching will be provided for those who wish it.

Local Organizing Committee: William Bertozzi, MIT; Edward Booth, Boston University; Heidi Demers, MIT; T. William Donnelly, MIT; Jean Flanagan, MIT; Jochen Heisenberg, University of New Hampshire; Stanley Kowalski, MIT; June Matthews, MIT; Richard Milner, MIT; Roy Miskimen, University of Massachusettts; John Negele, MIT; Craig Ogilvie, MIT; Robert Redwine, MIT; Stephen Steadman, MIT

Meeting Information: Registration and Housing: Heidi Demers, MIT Laboratory for Nuclear Science, Bldg. 26-505, 77 Massachusetts Ave., Cambridge, MA 01139 Tel: (617) 258-5448, Fax: (617) 253-0111, email: lnsdnp@mitlns.mit.edu. Our WWW page may be viewed at: http://marie.mit.edu.

Workshops: Two workshops will be held on 2 October prior to, but in conjunction with, the DNP meeting. One workshop will be "The Quark/Gluon Structure of the Nucleon," organized by John Negele and Richard Milner, and the second workshop will be "Collective Effect s in Heavy Ion Collisions," organized by Craig Ogilvie and Stephen Steadman. The workshops will be held in parallel.

**Abstracts:** Beginning 1 July 1996, APS publication of the Bulletin will switch to a desktop format. This will necessitate electronic submission of all abstracts (no exceptions). The DNP abstracts for the Spring 1995 Meeting were 85% electronic submission. For this minor inconvenience, we gain a later deadline. For 1996, it will be 28 June.

#### 6. FUTURE DNP FALL MEETINGS

The present schedule for Fall Meetings is as follows:

1996	October 2-5	Cambridge, MA
1997	October 5-8	Whistler, 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. NSAC NEWS AT THE TOWN MEETING,

#### H. Robertson

A report on Wednesday evening's (10/25) NSAC meeting was given by Hamish Robertson, the new NSAC chair. He began by acknowledging the service of the previous chair, Ernie Moniz, and the departing members of NSAC, who had worked so hard on the 1995 Long-range Plan. The Plan is in preliminary form, and a target date of Dec. 11 has been set to finalize the main body of text. The document should be complete by mid-January, and every effort will be made to distribute it widely. The fact that the FY96 budget (DOE \$304.5M, NSF approximately \$36 M) has fallen significantly below the charge (\$370-395 M total) from the Agencies in formulating the Long-Range Plan for FY97 and beyond has raised major concerns. The importance of restoring the planning levels cannot be overemphasized. The need for activism in making the value of our science known to legislators and the public was reiterated. In the present fiscal environment it is as important as it is difficult to maintain the capabilities and the excellence of nuclear science. Also discussed at the NSAC meeting were the nascent International Committee on Nuclear Physics, the Composite Subpanel on Accelerator Physics, and the Japanese 50-GeV hadron facility initiative.

### 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 1996 DNP Fellowship Committee is comprised of C.B. Dover, S.J. Freedman, J.H. Hamilton, and B. Müeller. 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. 1996 TOM W. BONNER PRIZE IN NUCLEAR PHYSICS, D.F. Geesaman

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, R. Middleton and W. Haeberli, 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, E. K. Warburton, and F. Boehm.

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).

Nominations remain active for three years. It is extremely helpful for the committee to receive additional letters of support that detail the contributions of the nominee and the impact these contributions have had on the field. It is also appropriate to submit material such as significant articles that might help us evaluate the nominee's contribution. While general statements concerning the value of the nominee's work are important, we must have specific information that allows us to determine what the nominee has contributed and how this contribution has impacted the field.

The Bonner Prize Committee recommendation for the 1996 award has been forwarded to the APS Council for approval. Watch for the announcement in *APS News*.

### 10. APS BETHE PRIZE, W.C. Haxton and E.M. Henley

The DNP has joined with the Division of Astrophysics in an effort to create a new APS prize in honor of Hans Bethe. The goal is to raise the necessary \$100,000+, the level required to keep the prize self-sustaining, prior to Hans' 90th birthday, July 2, 1996. Contributions from laboratories, industry, and over 120 individuals now total \$36,500. A list of donors is included in this newsletter.

The Bethe Prize effort was inspired by an address given by Hans at a recent Washington APS meeting in which he described himself as a nuclear physicist and an astrophysicist. The prize is intended to reflect the breadth of Hans' interests, and will be awarded for outstanding work in either of these fields. The Divisions will work together in selecting the recipients, with the role of "lead Division" alternating. The contributions from individuals now total \$16,900. As the committee raising funds has set \$25,000 as their goal for individual contributions, the campaign has reached 67% of the total. We ask each member of the two Divisions to consider supporting this effort.

You will find enclosed in this newsletter a donation form that can be mailed to the DNP Secretary/Treasurer Ben Gibson. We believe the broader the support for this effort, the more meaning the prize will have for Hans and for our community. Thank you for your help.

### 11. 1996 DISSERTATION AWARD IN NUCLEAR PHYSICS

This biennial prize, which recognizes a recent Ph.D. in nuclear physics, was established in 1985 by members and friends of the Division of Nuclear Physics of the APS. Previous winners are: B. Sherrill and W. J. Burger, Thomas E. Cowan, Michael J. Musolf, James Edward Koster, and Zhiping Zhao.

Nature: The Award consists of \$1,000 and an allowance for travel to the annual Spring Meeting of the Division of Nuclear Physics of the American Physical Society at which the award will be presented.

Rules and Eligibility: Nominations are open to any person who has received a Ph.D. degree in experimental or theoretical nuclear physics from a North American university within the two-year period preceding the deadline.

The 1996 winner will be invited to speak at the Spring APS/AAPT Meeting in Indianapolis.

#### 12. PHYSICS NEWS in 95, L.L. Riedinger

Three nuclear physics topics of high current interest were selected for inclusion in Physics News in 1995. The first item, prepared by J. A. Carlson, K. Langanke, and V. R. Pandharipande is entitled "Stochastic Methods Advance Nuclear Theory". The second item, prepared by R. N. Boyd, is entitled "Nucleosynthesis Through Rapid Proton Capture Reactions". The third item, prepared by A. B. Balantekin, is entitled "Recent

Highlights of Neutrino Physics." The three articles will appear in a future issue of APS News

# 13. BUDGET UPDATE FROM THE NUCLEAR SCIENCE RESOURCES COMMITTEE, L.L. Riedinger

The appropriations process continues in a year noted by high tensions within the Congress and also between the Congress and the Clinton Administration. The appropriations bill (HR 1905) including funding of General Science in the Department of Energy is one of the few such bills that has been passed and sent to the President for his signature. The conference committee called to mediate the differences between the House and the Senate versions produced the final numbers (in millions of dollars) in the next-to-last column of the following table:

	FY95	FY96	House	Senate	Conf.
					Req.
Fusion	\$372.6M	366.	229.1	281.	1244.1
BES	747.3	811.4	791.7	791.7	791.7
High					
Energy	642.1	685.6	677.0	657.0	667.0
Nuclear	331.5	321.1	304.5	304	5304.5

The funding for Nuclear Physics is down by \$27M from the level for the last fiscal year, due mostly to the closing of nuclear physics operations at LAMPF. The hope had been to use those funds for support of the operations of the new facilities, CEBAF and RHIC. The appropriations bill (HR 2099) for the National Science Foundation has not progressed as far, with no conference action yet to settle the differences between the House and the Senate. The current numbers are given below:

FY95	FY96	House	Senate	Req.
Total	\$3263M	3360	3160	2294

This bill also contains funding for other large government operations, including the Environmental Protection Agency and the Department of Housing and Urban Development. Controversial elements in these aspects of this bill make a veto by the President appear likely. The large decrease in the Research and Related Activities part of the NSF budget compared to the FY96 request is, of course, causing considerable worry throughout the disciplines supported by the Foundation. Uncertainty continues concerning the passage of these and other appropriations bills, as there is the distinct possibility of a yearlong continuing resolution to keep government programs funded at current (or likely reduced) levels.

### 14. 1995 EDITION OF THE NUCLEAR WALLET CARDS, M. Bhat

The 1995 Edition of the Nuclear Wallet Cards by J.K. Tuli of the National Nuclear Data Center (NNDC) at the Brookhaven National Laboratory is ready for distribution. A copy is enclosed with this newsletter. For additional copies, please contact the NNDC: User Services, National Nuclear Data Center, Bldg. 197D, Brookhaven National Laboratory, P.O. Box 5000, Upton, NY 11973-5000, Internet:

"services@bnlnd2.dne.bnl.gov", Phone: 516-282-2902, Fax: 516-282-2806.

## 15. THE DNP BROCHURE, "NUCLEAR PHYSICS: BASIC RESEARCH SERVING SOCIETY", G.M. Crawley

The DNP Brochure was completed by the time of the DNP Fall Meeting in Williamsburg, VA. Eight thousand copies were printed and 300 of these disappeared like snow in July when they were made available at the Fall Meeting. One copy was distributed to each DNP member. Overall about 7000 copies have been distributed. Large distributions were to the chairs of physics departments of all research universities and selected four-year colleges, all members of the U.S. Congress and to DOE and NSF. In addition, copies were sent to directors of large laboratories both here and in Europe, to members of HEPAP

and NUPPEC, to the officers of other APS divisions and to about 20 science journalists. About 2000 copies have been distributed in response to individual requests from a wide variety of people both in the U.S. and overseas. Perhaps the most unusual request was from a UN official in Cairo who wanted to use the brochure to illustrate the benefits of basic research to government officials in the Arab countries. We will continue to distribute the remaining copies as they are requested and will produce a second printing. Finally with the help of Dr. Balantekin, we hope to put the Brochure on the World Wide Wed so that it will be accessible electronically.

### 16. 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, Benjamin F. Gibson, Los Alamos National Laboratory, P. O. Box 1663, T 5, MS B283, Los Alamos, NM 87545.

1995-96 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.

### 17. JAPAN'S NEW PLAN FOR A 50 GEV PS AT INS/KEK, S. Nagamiya

The Japanese Nuclear Physics Committee (chair: M. Ishihara) is pushing a 50 GeV PS with high intensity beams as a central nuclear physics facility in Japan. This proposal has been endorsed strongly by both the INS Director (S. Yamada) and KEK Director (H. Sugawara), where INS stands for Institute for Nuclear Study at University of Tokyo. Subsequently, the Japanese High-Energy Physics Committee has voiced support for this project. The proposal will soon be submitted to the Government. Because of enthusiastic support by the community and INS/KEK directors, the probability of success of this project is very high. INS will become independent of the University of Tokyo and move to the KEK area, forming a new joint organization with KEK to push the plan. The present plan can be summarized below:

a) Main Ring: 50 GeV (for protons), Current> 10 microA [Physics]

- Nuclear physics with high-intensity kaons and pions (\*)
  - Hyperon beam experiments (\*)
  - Rare kaon decay experiments (\*)
  - High-density matter physics with 20-

#### 25 GeV/nucleon

heavy-ions (\*\*)

- Neutrino oscillation experiments (\*)
- Anti-proton related physics (\*\*\*)
- b) Booster Ring: 3 GeV (for protons),

Current = 200 microA [Physics]

- Nuclear physics with low-energy radioactive beams (\*)
  - Muon physics (\*)
  - Condensed matter physics with 0.6

#### MW spallation

neutron source (\*)

\*...To be covered on Day-1.

\*\*...Light-ion acceleration is planned on

Day-1, while

heavy-ions (A=200) will come later.

\*\*\* ... Anti-proton accumulator will be planned in the

second stage.

The goal is to start the construction in 1997 or 1998 and to obtain the first beam in 2002. The facility will be open widely to the international

community, both to the Asian countries and to the US and European communities. The first international workshop on this new project will be held on December 14-16 at INS. Two days will be spent on physics at 50 GeV and the last day on discussion of the international usage of this facility.

Information on the Workshop can be obtained from Professor T. Fukuda at INS. He can be reached at "fukuda@ins.u-tokyo.ac.jp", fax: 81(Japan)-424-64-9480.

## 18. FEW-BODY SYSTEMS ELECTRONIC VERSION ON THE INTERNET, W. Plessas

The journal FEW-BODY SYSTEMS was launched on the Internet in the beginning of 1995. Starting with issue 18/1, almost 2 volumes are accessible on-line. The electronic version of FEW-BODY SYSTEMS is a 1:1 image of the printed journal. FEW-BODY SYSTEMS Electronic can be accessed with various Internet tools, such as World-Wide Web, WAIS, Gopher and the like. However, it performs best with the new networked hypermedia tool Hyper-G. This supports many advanced features, such as:

- \* full search functions (user-definable);
- \* implementing graphics, colour images, video, sound;
- \* integrated viewers for text, image, film, audio, PostScript, 3D, (including hyperlinks);
- \* hyperlinks in all kinds of documents (specifically also in PostScript documents);
- \* navigation control through session manager (3D information landscape at user's choice);
- \* configurable user client. Hyper-G thus supersedes previous Internet tools as it allows one to "use", rather than merely read or print, the articles in FEW-BODY SYSTEMS Electronic and similar journals. Users have at their disposal, e.g.:
  - \* downloading all kind of electronic files;
- \* clicking anchors to follow (bi-directional) links to certain equations, tables, figures,

references, related documents, annotations to subsequent articles (comments, errata);

\* immediate on-line access to electronic back issues, fully searchable subject and author indexes, etc.

In order to take full advantage of all features of FEW-BODY SYSTEMS Electronic one must install a Hyper-G client on one's own computer. Hyper-G clients are presently available for UNIX and PC/Windows. They are called "Harmony" and "Amadeus", respectively. Soon there will also be a client for Macintosh. One may get the appropriate Hyper-G client for free from the directory /pub/Hyper-G via anonymous ftp to "iicm.tu-graz.ac.at". Installation instructions are obtainable there too. With one's own Hyper-G client installed, connect to the Hyper-G server "fbs.kfunigraz.ac.at", advance to the collection "fbs", and find the home page of FEW-BODY SYSTEMS Electronic. As said above, FEW-BODY SYSTEMS Electronic can also be accessed from the WWW and, with less comfort, with Gopher etc. In these cases, connect to the WWW: http://fbs.kfunigraz.ac.at/Cfbs or to Gopher: fbs.kfunigraz.ac.at.

Free access to (all features of) FEW-BODY SYSTEMS Electronic, 24 hours a day, will be allowed during an initial test phase, tentatively till the end of 1995. Later a subscription to the printed version will be required to get a full access license. Springer offers an individual halfprice subscription (about US \$ 300 for 8 issues per year) for all members of the APS. Corresponding orders can be made through Springer-Verlag New York Inc., 175 Fifth Avenue, New York, NY 10010, tel.: 800-Springer (toll free), fax: 201 348 4505, email: orders@springer-ny.com, http://www.springerny.com/ordernew.html. The editors of FEW-BODY SYSTEMS would appreciate receiving comments and suggestions by email to "fbse@edvz.kfunigraz.ac.at".

#### 19. APS GRASSROOTS ACTIVITIES, L. L. RIEDINGER

The physics and government network is made up of a reliable core group of APS members who have volunteered to contact their Member of Congress as needed. Currently, the PGNet has 713 active members. The APS Washington office is recruiting to enlarge this core group to 1,000 by next April, the crucial time to begin addressing the FY97 federal budget. To keep the PGNet informed of events in Washington, all members are emailed the weekly newsletter "What's New" and the science policy update "FYI" put out by the American Institute of Physics. Once a year, the APS Washington office sponsors a month of "Congressional Visits." Members of the network are sent a packet of information to assist them in visiting with their Member of Congress. The packets include: the Representative's bio, a summary of science funding in the district, tips on "communicating with Congress," a review of the science budget, and issue briefs. When events in Washington require an immediate response from the community, the APS Washington office issues alerts to the PGNet. These alerts provide background information, often include text of the relevant legislation, and identify who should be contacted. It is important to increase the level of nuclear physics participation in this network. The perilous state of the federal budget for support of scientific research suggests that each of us should strengthen our efforts to tell our elected officials about the importance of fundamental and applied research. Those wishing to become members of this network can sign up by completing and mailing the enclosed green sheet, or by sending this information by email to Michael Lubell, the leader of this effort, at "lubell@aps.org".

#### 20. CANDIDATE BIOGRAPHIES

#### NOMINATIONS FOR VICE-CHAIR

STUART J. FREEDMAN - Professor of Physics, Berkeley - University of California, 1991-present; B. S., Berkeley - University of California, 1965; M. S., Berkeley - University of California, 1967;

Ph.D. Physics, Berkeley - University of California; Research Assistant, Berkeley -University of California, 1970-72; Instructor, Princeton University, 1972-75; Lecturer, Princeton University, 1975-76; Assistant Professor, Stanford University, 1976-82; Staff Physicist, Argonne National Laboratory, 1982-87; Professor, Enrico Fermi Institute, The University of Chicago, 1987-91; Senior Physicist, Argonne National Laboratory, 1987-present; Faculty Senior Scientist, Lawrence Berkeley Laboratory, 1991-present. Honors: Kraft Award, 1962; Phi Beta Kappa, 1965; Tau Beta Pi, 1965; NDEA Fellow, 1965-69; Sloan Foundation Fellow, 1978-82; Fellow, American Physical Society. Steering Committee, RMP Colloquia, 1990-present; Consultant, Los Alamos National Laboratory, 1990-present; Program Committee, APS-Division of Nuclear Physics, 1993-present; Fellowship Committee, APS-Division of Nuclear Physics, 1993-present; Member-at-Large, APS Topical group on precision measurements and constants, 1993-present; fundamental International Science Foundation Panelist, 1993present; Editorial Review Committee Physical Review C; APS Physics News Committee, 1994present. Current Research Interests Weak interactions; fundamental symmetries; neutrino physics; atom trapping.

ROBERT P. REDWINE - Professor of Physics, MIT, 1990-present; A.B. Physics, Cornell University, 1969; Ph.D. Physics, Northwestern University, 1973; Director, Laboratory of Nuclear Science, MIT, 1992-present; Visiting Professor of Physics, Princeton University, Spring 1989; Visiting Professor of Physics, Rutgers University, Fall 1988; Associate Professor of Physics, MIT, 1982-90; Assistant Professor of Physics, MIT, 1979-82; Staff Scientist, Los Alamos National Laboratory, 1977-79; Forschungsassistent, University of Berne, Switzerland, 1974-75; Research Associate, Los Alamos National Laboratory, 1973-74, 1975-77; LAMPF Technical Advisory Panel, 1979-81; LAMPF Program Advisory Committee, 1981-84; LAMPF Users Group Board of Directors, 1982-84; Nuclear Science Advisory Committee Long Range Planning Committee, 1983; Swiss Institute

for Nuclear Research, Program Advisory Committee, 1984-93 (chair 1988-93); Netherlands Institute for Nuclear and High Energy Physics, Program Advisory Committee, 1984-89; Chair, LAMPF Users Group, 1985; TRIUMF Program Advisory Committee, 1985-88; Bates Users Group Board of Directors, 1986-88; APS Bonner Prize Committee 1986-87 (chair 1987); Indiana University Cyclotron Facility, Program Advisory Committee, 1987-90; Bates Linear Accelerator Center, Program Advisory Committee, 1988-91; Nuclear Science Advisory Committee, Long Range Planning Committee, 1989; Chair, APS/DNP Nominating Committee, 1989; LAMPF Program Advisory Committee, 1990-93; Physical Review C Editorial Board, 1990-93; NSERC (Canada) Subatomic Physics Committee, 1990-93; NSF Advisory Committee for Physics, 1990-93; LAMPF Users Group Board of Directors, 1992-94; Chairman, NSF Committee to Review Large Medium Energy Facilities, 1992; Nuclear Science Advisory Committee, Long Range Planning Committee, 1995; DNP Program Committee, 1995-present; Physical Review Letters Divisional Associate Editor, 1995-present. Research Interests: Intermediate energy physics; especially pion scattering and reactions, photopion and photo-nucleon reactions, few body problems, and medium energy tests of weak interaction properties.

#### NOMINATION FOR SECRETARY/TREASURER

BENJAMIN F. GIBSON - Staff Member, Los Alamos National Laboratory, 1972 - present; Group Leader 1982-86; B.A. Rice University, 1961; Ph.D. Stanford University, 1966; Post Doctoral Fellow, LLNL, 1966-1968; NRC Post Doctoral Research Associate, NBS, Gaithersburg, 1968-1970; Research Associate, Brooklyn College of the CUNY, 1970-1972. APS Fellow; JSPS Research Fellow, Sendai, 1984; Murdoch Fellow, INT Seattle, 1992; Humboldt Research Award for Senior U.S. Scientists, Juelich, 1992-present. NSAC Subcommittee on Computers and Computing, 1984-85; Bates Program Advisory Committee, 1985-89; LAMPF Program Advisory Committee, 1993; Few-Body Systems Topical

Group Vice-Chair, Chair-Elect, and Chair, 1990-93; DNP Program Committee, 1990-92; Natural Sciences and Engineering Research Council of Canada, Subatomic Physics Grant selection Committee, 1994-97. Editorial Board of Physical Review C 1978-79, 1987-88; Editorial Board of Few-Body Systems, 1986-91, 1992-present; Associate Editor of Physical Review C; 1988-92, 1992-present. Program Chairman for the APS April Meeting, 1992; Organizing Committee for the DNP Fall Meeting, 1989; local organizer for the DNP Light Hadronic Probes Town Meeting, 1989. Research interests: few-body systems, hypernuclei, electromagnetic interactions in nuclei, meson interactions with nuclei, parity non conservation in nuclear systems, hadron structure.

### NOMINATIONS FOR EXECUTIVE COMMITTEE

THOMAS J. BOWLES - Fellow, Los Alamos National Laboratory, 1994-present; Affiliate Professor, University of Washington, 1995present; B.S. Physics and Mathematics, University of Colorado, 1973; Ph.D. Physics, Princeton University, 1978; Acting Group Leader, Los Alamos National Laboratory, 1994-95; Staff Member, Los Alamos National Laboratory, 1979-94; Postdoctoral Research Associate, Argonne National Laboratory, 1976-79; WICHE Fellow, Environmental Protection Agency, Denver Federal Center, 1973; NSF Undergraduate Research Fellow, University of Colorado, 1972-73. Committees, Honors Fellow, American Physical Society, 1993; Secretary, Fellows, Los Alamos National Laboratory, 1995; Subcommittee on Fundamental Physics of the Neutron Scattering Society of America, 1994-present; Chair, Nominating Committee of the Division of Nuclear Physics, 1993; DOE Panel on Fundamental Physics for Scientific Opportunities at Spallation Neutron Sources, 1993; NSF Summer School in Nuclear Physics Lecturer, University of Oregon, 1992; Chair, Postdoctoral Committee, Los Alamos National Laboratory, 1989-92; LAMPF Technical Advisory Panel, 1982-85; President, Sigma Pi Sigma, University of Colorado Chapter, 1973-74; Phi Beta Kappa,

1973; Sigma Pi Sigma, 1973; Delta Phi Alpha, 1973; Jacob von Ek Award, University of Colorado, 1973. Research Interests: Weak interactions; solar neutrinos; neutron physics; neutrino physics; nuclear astrophysics.

CATHLEEN E. JONES - Assistant Physicist, Argonne National Laboratory, 1993-present; B.S., Texas A&M University, 1982; Ph.D., Caltech, 1991; Post Doctoral Research Appointment, Argonne National Laboratory, 1992-1993; Post Doctoral Research Appointment, University of Wisconsin-Madison, 1991-1992; Member, APS; Research Interests Spin-dependent electromagnetic properties of few-body nuclei in quasi elastic and deep inelastic lepton scattering; tests of QCD in nuclear systems; development of laser-driven polarized targets of the few-body nuclei.

RICHARD G. MILNER - Associate Professor of Physics, Massachusetts Institute of Technology, 1993-present; Assistant Professor of Physics, Massachusetts Institute of Technology, 1988-93; Research Scientist, California Institute of Technology, 1987-88; Post Doctoral Research Fellow, California Institute of Technology, 1985-88; Ph.D. Physics, California Institute of Technology, 1985; M.Sc. Theoretical Physics, National University of Ireland (Cork), 1979; B.Sc. (Hons.) Experimental Physics and Mathematical Science, National University of Ireland (Cork), 1978; 1989 NSF Presidential Young Investigator; DNP Program Committee 1994-present; CEBAF Program Advisory Committee 1993-present: MIT-Bates Program Advisory Committee 1994-present; RHIC Spin Physics Committee Review, 1995; Research Interests Nuclear and hadron structure from high momentum scattering and spin observables; polarized targets; charge, magnetic and helicity structure of the nucleon.

BERNDT MUELLER - Professor of Physics, Duke University, 1990-present; Ph.D. 1973 Universitat Frankfurt; Research Associate, University of Washington, 1974-75; Associate Professor, University of Frankfurt, 1976-89; Visiting appointments: Vanderbilt University,

California Institute of Technology, University of Tokyo, University of Cape Town, University of Arizona. Honors - Fellow APS, AAAS; Rontgen Award, University of Giessen, 1975; DNP Program Committee, 1990-92; Nuclear Science Advisory Committee, 1992-95; BNL Physics Department Visiting Committee, 1992-95; Associate Editor, Physical Review Letters, 1992-94; DPF Long Range Planning Study, convener, 1994; Nuclear Physics Long Range Plan, chair writing group, 1995; DNP Fellowship Committee, 1995-; National Advisory Committee, Institute for Nuclear Theory, 1995-. Research Interests: Theoretical nuclear physics, relativistic heavy ion collisions, quark-gluon plasma, physics of strong fields.

WITOLD NAZAREWICZ - Professor of Physics, University of Tennessee, 1995-present, and Warsaw University, 1990-present; M. S., Warsaw University of Technology, 1977; Ph.D., Institute for Nuclear Research, Warsaw, 1981; Dr. Habil, Warsaw University, 1986. Assistant, Warsaw University, 1977-81; Assistant Professor, Warsaw University, 1981-88; Associate Professor, Warsaw University, 1988-91; Post Doctoral Fellow, Lund University, 1982-84; Associate Dean, Department of Technical Physics and Applied Mathematics, Warsaw University of Technology, 1987-90. Honors: Individual Science Awards Polish Ministry of Education, 1982, 1987, 1989; Polish Nuclear Energy Commission, 1983; Polish Physical Society, 1986; Fellow APS. Editorial Board, Phys. Rev. C, 1994-present; Eurogam PAC, 1990-94; Nuclear Physics Board EPS, 1992-95; NSF Special Emphasis Panel on the Evaluation of the NSF Low-Energy Nuclear Physics Accelerator Laboratories, 1993; VIVITRON PAC, Strasbourg, 1994-present; HRIBF PAC, ORNL, 1994-present; NSCL PAC, MSU, 1995-present; National Advisory Committee, INT Seattle, 1995present; Convenor of DOE/NSF NSAC Town Meeting on Nuclear Structure, Low-Energy Reactions and Radioactive Ion Beams, 1995; NSAC Long Range Plan Working Group, 1995. Co-organizer 8 International Conferences including: Workshop on High Spins and Novel Deformations, INT Trento, 1993; Nuclear

Structure Under Extreme Conditions, INT-95-3 Program, INT Seattle; Chair, Nuclear Chemistry Gordon Conference, 1995. Research Interests: Theoretical physics, nuclear structure, many-body problems.

BRADLEY M. SHERRILL - Associate Professor of Physics, Michigan State University, 1995present; Ph.D., Michigan State University, 1985; Assistant Professor of Physics, Michigan State University 1991-95; Staff Scientist, National Superconducting Cyclotron Laboratory, 1987-90; Visiting Scientist, Gesellschaft fur Schwerionenforschung, Darmstadt, 1985-86; North American Isospin Laboratory Steering Committee, 1991-present; Program Committee, Division of Nuclear Physics, 1993-94; Project Leader S800 Magnetic Spectrograph, National Superconducting Cyclotron Laboratory, 1992 present. Honors: American Physical Society Dissertation Award in Nuclear Physics, 1985; Phi Beta Kappa; Phi Beta Phi; Sherwood K. Haynes Award, Michigan State University, 1995; Coorganizer, Int. Conf. on Research with Magnetic Spectrographs, 1989; Local Organizing Committee, RNB-III, 1993; Organizing Committee EMIS-13, 1995. Research Interests: Structure of nuclei far from stability; nuclear astrophysics; resonance properties of nuclei; radioactive ion beam production and experimentation; ion beam optics.

#### 21. FUTURE CONFERENCES

Organizers of future conferences should contact the DNP Secretary-Treasurer if they wish their conferences listed in DNP newsletters. 3-mail: dnp@t5.lanl.gov.

### Workshop on Physics of 50 GeV PS at INS/KEK,

14-16 December 1995, to be held at the Institute for Nuclear Study (INS) in Tokyo, Japan. [For further information contact Prof. T. Fukuda at the INS, fax: 81-424-64-9480, email: "fukuda@ins.u-tokyo.ac.ip".]

### "XIX Nuclear Physics Symposium at Oaxtepec",

3-6 January 1996, to be held in Oaxtepec, Mexico. [For further information contact: Roelof Bijker, Instituto de Ciencias Nucleares UNAM, A. P. 70-543, 04510 Mexico DF, Mexico, fax: (525) 616-2233, email: "bijker@roxanne.nuclecu.unam.mx"].

"PANIC 96 - The XIV International Conference on Particles and Nuclei", to be held 22-28 May 1996, hosted by the College of William and Mary and CEBAF, to be held in historic Williamsburg, VA. [For further information contact: Conference Secretary, PANIC 96, CEBAF, 12000 Jefferson Avenue, Newport News, VA 23606, USA, phone: 804-249-7500, fax: 804-249-7363, email: "panic@cebaf.gov"].

"1996 Gordon Research Conference on Nuclear Chemistry", 16-21 June 1996, to be held in New London, New Hampshire, USA. [For further information contact: W. Trautmann, GSI Darmstadt, Postfach 110552, D-64220, Darmstadt, Germany, phone: +49-6151-359 2774, fax: +49-6151-359 2989, email: "traut@vsbz.gsi.de"].

"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, email: "molnar@iserv.iki.kfki.hu"].

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, email: "molnar@iserv.iki.kfki.hu"].

"Fourteenth International Conference on the Application of Accelerators in Research and Industry", 6-9 November, 1996, to be held at the University of North Texas in Denton, Texas.

Contact Persons: J.L. Duggan, University of North Texas, Department of Physics, P.O. Box 5368, Denton, Texas 76203, Telephone: 817-565-3252 or Barbie Stippec, Telephone: 817-565-3250, Fax: 817-565-2227, or email:

"stippec@cas.unt.edu".