

## 2000 PUBLICATIONS

*Publications and invited talks by non-NSCL scientists which are based in whole or in part on experimental work at the NSCL are tagged with the symbol #.*

### PAPERS

#### (a) Physical Review Letters

One-Neutron Knockout from Individual Single-Particle States of  $^{11}\text{Be}$ ; T. Aumann, A. Navin, D.P. Balamuth, D. Bazin, B. Blank, B.A. Brown, J.E. Bush, J.A. Caggiano, B. Davids, T. Glasmacher, V. Guimar es, P.G. Hansen, R.W. Ibbotson, D. Karnes, J.J. Kolata, V. Maddalena, B. Pritychenko, H. Scheit, B.M. Sherrill, and J.A. Tostevin, Phys. Rev. Lett. **84**(2000)35

Balance of Mass, Momentum, and Energy in Splintering Central Collisions for  $^{40}\text{Ar}$  up to 115 MeV/nucleon; R. Sun, E. Colin, N.N. Ajitanand, J.M. Alexander, M.A. Barton, P.A. DeYoung, K.L. Drake, A. Elmaani, C.J. Gelderloos, E.E. Gualtieri, D. Guinet, S. Hannuschke, J.A. Jaasma, L. Kowalski, R.A. Lacey, J. Lauret, E. Norbeck, R. Pak, G.F. Peaslee, M. Stern, N.T.B. Stone, S.D. Sundbeck, A.M. Vander Molen, G.D. Westfall, L.B. Yang, and J. Yee, Phys. Rev. Lett. **84**(2000)43

Canonical and Microcanonical Calculations for Fermi Systems; S. Pratt, Phys. Rev. Lett. **84**(2000)4255

Direct Evidence for the Breakdown of the N=8 Shell Closure in  $^{12}\text{Be}$ ; A. Navin, D.W. Anthony, T. Aumann, T. Baumann, D. Bazin, Y. Blumenfeld, B.A. Brown, T. Glasmacher, P.G. Hansen, R.W. Ibbotson, P.A. Lofy, V. Maddalena, K. Miller, T. Nakamura, B.V. Pritychenko, B.M. Sherrill, E. Spears, M. Steiner, J.A. Tostevin, J. Yurkon, and A. Wagner, Phys. Rev. Lett. **85**(2000)266

Isospin Fractionation in Nuclear Multifragmentation; H.S. Xu, M.B. Tsang, T.X. Liu, X.D. Liu, W.G. Lynch, W.P. Tan and G. Verde, L. Beaulieu, B. Davin, Y. Larochele, T. Lefort, R.T. de Souza, R. Yanez, V.E. Viola, R.J. Charity, and L.G. Sobotka, Phys. Rev. Lett. **85**(2000)716

First On-Line Beta-NMR on Oriented Nuclei: Magnetic Dipole Moments of the (neutron  $p1/2$ ) $^{-1}$   $1/2$ - Ground State in  $^{67}\text{Ni}$  and (proton  $p3/2$ ) $^{+1}$   $3/2$ - Ground State in  $^{69}\text{Cu}$ ; J. Rikovska, T. Giles, N.J. Stone, K. van Esbroeck, G. White, A. W hr, M. Veskovic, I.S. Towner, P.F. Mantica, J.I. Prisciandaro, D.J. Morrissey, V.N. Fedoseyev, V.I. Mishin, U. K ster, and W.B. Walters, Phys. Rev. Lett. **85**(2000)1392

Clocking Hadronization in Relativistic Heavy Ion Collisions with Balance Functions; S. Bass, P. Danielewicz, and S. Pratt, Phys. Rev. Lett. **85**(2000)2689

Geometric Chaoticity Leads to Ordered Spectra for Randomly Interacting Fermions; D. Mulhall, A. Volya, and V. Zelevinsky, Phys. Rev. Lett. **85**(2000)4016

Neutron Radii in Nuclei and the Neutron Equation of State; B.A. Brown, Phys. Rev. Lett. **85**(2000)5296

Double-Octupole States in  $^{208}\text{Pb}$ ; B.A. Brown, Phys. Rev. Lett. **85**(2000)5300

#### (b) Physics Letters B

#Negative Heat Capacity in the Critical Region of Nuclear Fragmentation: An Experimental Evidence of the Liquid-Gas Phase Transition; M. D'Agostino, F. Gulminelli, Ph. Chomaz, M. Bruno, F. Cannata, R. Bougault, F. Gramegna, I. Iori, N. Le Neindre, G.V. Margagliotti, A. Moroni, and G. Vannini, Phys. Lett. **B473**(2000)219

Coulomb Displacement Energies in the Skyrme Hartree-Fock Model; B.A. Brown, W.A. Richter, and R. Lindsay, Phys. Lett. **B483**(2000)49

Spectroscopy of the  $2(1)^+$  State in  $^{22}\text{O}$  and Shell Structure Near the Neutron Drip Line; P.G. Thirolf, B.V. Pritychenko, B.A. Brown, P.D. Cottle, M. Chromik, T. Glasmacher, G. Hackman, R.W. Ibbotson, K.W. Kemper, T. Otsuka, L.A. Riley, and H. Scheit, Phys. Lett. **B485**(2000)16

Low-Lying Collective States in Neutron-Rich Oxygen Isotopes via Proton Scattering; E. Khan, Y. Blumenfeld, N. Van Giai, T. Suomijarvi, N. Alamanos, F. Auger, G. Col, N. Frascaria, A. Gillibert, T. Glasmacher, M. Godwin, K.W. Kemper, V. Lapoux, I. Lhenry, F. Marchal, D.J. Morrissey, A. Musumarra, N.A. Orr, S. Ottini-Hustache, P. Piattelli, E.C. Pollacco, P. Roussel-Chomaz, J.C. Roynette, D. Santonocito, J.E. Sauvestre, J.A. Scarpaci, and C. Volpe, Phys. Lett. **B490**(2000)45

Structure of the Weakly—Bound Nucleus  $^6\text{He}$  Studied via the  $^6\text{Li}(t, ^3\text{He})^6\text{He}$  Reaction; T. Nakamura, T. Aumann, D. Bazin, Y. Blumenfeld, B.A. Brown, J. Caggiano, R. Clement, T. Glasmacher, P.A. Lofy, A. Navin, B.V. Pritychenko, B.M. Sherrill, and J. Yurkon, Phys. Lett. **B493**(2000)209

#### (c) Physical Review C: Rapid Communications

Disappearance of Transverse Flow in Au + Au Collisions; D.J. Magestro, W. Bauer, O. Bjarki, J.D. Crispin, M.L. Miller, M.B. Tonjes, A.M. Vander Molen, G.D. Westfall, R. Pak, and E. Norbeck, Phys. Rev. **C61**(2000)021602(R)

Intermediate-Energy Coulomb Excitation of  $^{19}\text{Ne}$ ; G. Hackman, S.M. Austin, T. Glasmacher, T. Aumann, B.A. Brown, R.W. Ibbotson, K. Miller, B. Pritychenko, L.A. Riley, B. Roeder, and E. Spears, Phys. Rev. **C61**(2000)052801(R)

Isotropic Emission Components in Splintering Central Collisions: (17-115) A MeV  $^{40}\text{Ar} + \text{Cu, Ag, Au}$ ; R. Sun, E. Colin, N.N. Ajitanand, J.M. Alexander, M. A. Barton, P.A. DeYoung, K. L. Drake, A. Elmaani, C.J. Gelderloos, E.E. Gualtieri, D. Guinet S. Hannuschke, J. A. Jaasma, L. Kowalski, R.A. Lacey, J. Lauret, E. Norbeck, R. Pak, G.F. Peaslee, M. Stern, N.T.B. Stone, S.D. Sundbeck, A.M. Vander Molen, G.D. Westfall, L.B. Yang, and J. Yee, Phys. Rev. **C61**(2000)061601(R)

Neutron-Proton Asymmetry of the Midvelocity Material in an Intermediate-Energy Heavy-Ion Collision; L.G. Sobotka, R.J. Charity, D.K. Agnihotri, W. Gawlikowicz, T.X. Liu, W. Lynch, U. Schröder, J. Tke, and H.S. Xu, Phys. Rev. **C62**(2000)031603(R)

#Isotopic Composition of Fragments in Nuclear Multifragmentation; P.M. Milazzo, A.S. Botvina, G. Vannini, N. Colonna, F. Gramegna, G.V. Margagliotti, P.F. Mastinu, A. Moroni, and R. Rui, Phys. Rev. **C62**(2000)041602(R)

Isolation of the Nuclear Compressibility with the Balance Energy; D.J. Magestro, W. Bauer, and G.D. Westfall, Phys. Rev. **C62**(2000)041603(R)

Single-Particle Structure Along the Boundary of the "Island of Inversion": Radioactive Beam Spectroscopy of  $^{33}\text{Si}$  and  $^{34}\text{P}$ ; B.V. Pritychenko, T. Glasmacher, B.A. Brown, P.D. Cottle, R.W. Ibbotson, K.W. Kemper, and H. Scheit, Phys. Rev. **C62**(2000)051601(R)

#### (d) Physical Review C

Particle Removal Reactions with Deformed Projectiles; A. Sakharuk and V. Zelevinsky, Phys. Rev. **C61**(2000)014609

Statistical Analysis of the Hot Giant Dipole Resonance with the Phonon Damping Model; N. Dinh Dang, K. Eisenman, J. Seitz, and M. Thoennessen, Phys. Rev. C **61**(2000)027302

Band Terminations in the Valence Space of  $^{86}\text{Zr}$ ; J. D ring, Y.A. Akovali, C. Baktash, F.E. Durham, C.J. Gross, P.F. Hua, G.D. Johns, M. Korolija, D.R. LaFosse, I.Y. Lee, A.O. Macchiavelli, W. Rathbun, D.G. Sarantites, D.W. Stracener, G.Z. Solomon, S.L. Tabor, A. Vander Molen, A.V. Afanasjev, and I. Ragnarsson, Phys. Rev. C **61**(2000)034310

Yrast and Near-Yrast Excitations up to High Spin in  $^{100}\text{Cd}$ ; R.M. Clark, J.N. Wilson, D. Appelbe, M.P. Carpenter, C.J. Chiara, M. Cromaz, M.A. Deleplanque, M. Devlin, R.M. Diamond, P. Fallon, D.B. Fossan, R.V.F. Janssens, D.G. Jenkins, N. Kelsall, T. Koike, D.R. LaFosse, G.J. Lane, I.Y. Lee, A.O. Macchiavelli, D.G. Sarantites, D. Seweryniak, K. Starosta, F.S. Stephens, C.E. Svensson, K. Vetter, R. Wadsworth, J.C. Waddington, D. Ward, I. Wieden ver, and B.A. Brown, Phys. Rev. C **61**(2000)044311

Nuclear Viscosity of Hot Rotating  $^{240}\text{Cf}$ ; N.P. Shaw, I. Di szegi, I. Mazumdar, A. Buda, C.R. Morton, J. Velkovska, A. Broderick, V. Ziskin, J.R. Beene, N. Gan, D.W. Stracener, R.L. Varner, M. Thoennessen, and P. Paul, Phys. Rev. C **61**(2000)044612

$\omega\gamma$  for  $^{19}\text{Ne}(p,\gamma)^{20}\text{Na}(2.64\text{ MeV})$ ; H.T. Fortune, R. Sherr, and B.A. Brown, Phys. Rev. C **61**(2000)057303

Rotational Bands in  $^{44}\text{Ti}$ ; C.D. O'Leary, M.A. Bentley, B.A. Brown, D.E. Appelbe, R.A. Bark, D.M. Cullen, S. Erturk, A. Maj, and A. C. Merchant, Phys. Rev. C **61**(2000)064314

Spectroscopy of  $^{13,14}\text{B}$  via the One-Neutron Knockout Reaction; V. Guimar es, J.J. Kolata, D. Bazin, B. Blank, B.A. Brown, T. Glasmacher, P.G. Hansen, R.W. Ibbotson, D. Karnes, V. Maddalena, A. Navin, B. Pritychenko, B.M. Sherrill, D.P. Balamuth, and J.E. Bush, Phys. Rev. C **61**(2000)064609

Nuclear Disassembly in Violent Central Collisions at Intermediate Energies: (65-115) A MeV  $^{40}\text{Ar} + \text{Cu, Ag, Au}$ ; E. Colin, R. Sun, N.N. Ajitanand, J.M.Alexander, M.A. Barton, P.A. DeYoung, K.L. Drake, A. Elmaani, C.J. Gelderloos, E.E. Gualtieri, D. Guinet, S. Hannuschke, J.A. Jaasma, L. Kowalski, R.A. Lacey, J. Lauret, E. Norbeck, R. Pak, G.F. Peaslee, M. Stern, N.T.B. Stone, S.D. Sundbeck, A.M. Vander Molen, G.D. Westfall, L.B. Yang, and J. Yee, Phys. Rev. C **61**(2000)067602

$^4\text{He}+^4\text{He}$  Elastic Scattering at 280 and 620 MeV; K.A.G. Rao, A. Nadasen, D. Sisan, W. Yuhasz, D. Mercer, S.M. Austin, P.G. Roos, and R.E. Warner, Phys. Rev. C **62**(2000)014607

Polarization Associated with the Coupling to Isoscalar Dipole Compression Mode; I. Hamamoto and B.A. Brown, Phys. Rev. C **62**(2000)024318

Total Reaction and Neutron-Removal Cross Sections of (30—60)A MeV He and Li Isotopes on Pb; R.E. Warner, M.H. McKinnon, N.C. Shaner, F.D. Becchetti, A. Nadasen, D.A. Roberts, J.A. Brown, A. Galonsky, J.J. Kolata, R.M. Ronningen, M. Steiner, and K. Subotic, Phys. Rev. C **62**(2000)024608

$B[E2: 0^+(\text{g.s.}) \rightarrow 2^+(1)]$  in  $^{18}\text{Ne}$  and Isospin Purity in  $A = 18$  Nuclei; L.A. Riley, P.D. Cottle, M. Fauerbach, T. Glasmacher, K.W. Kemper, B.V. Pritychenko, and H. Scheit, Phys. Rev. C **62**(2000)034306

Crossing the Dripline to  $^{11}\text{N}$  using Elastic Resonance Scattering; K. Markenroth, L. Axelsson, S. Baxter, M.J.G. Borge, C. Donzaud, S. Fayans, H.O.U. Fynbo, V.Z. Goldberg, S. Grevy, D. Guillemaud-Mueller, B. Jonson, K.-M. Kallman, S. Leenhardt, M. Lewitowicz, T. Lonroth, P. Manngard, I. Martel, A.C. Mueller, I. Mukha, T. Nilsson, G. Nyman, N.A. Orr, K. Riisager, G.V. Rogachev, M.-G. Saint-

Laurent, I.N. Serikov, N.B. Shul'gina, O. Sorlin, M. Steiner, O. Tengblad, M. Thoennessen, E. Tryggestad, W.H. Trzaska, F. Wenander, J.S. Winfield, and R. Wolski, Phys.Rev. **C62**(2000)034308

Ground-State Magnetic Moment of the  $T = 1$  Nucleus  $^{32}\text{Cl}$  Using On-Line  $\mu$ -NMR Spectroscopy; W.F. Rogers, G. Georgiev, G. Neyens, D. Borremans, N. Coulier, R. Coussement, A.D. Davies, J.L. Mitchell, S. Teughels, B.A. Brown, and P.F. Mantica, Phys. Rev. **C62**(2000)044312

Microscopic Calculation of Double-Dipole Excitations; B.A. Brown, V. Zelevinsky, and N. Auerbach, Phys. Rev. **C62**(2000)044313

Separation of Isoscalar Isovector Orbital and Spin Contributions for M1 Transitions in Mirror Nuclei; Y. Fujita, B.A. Brown, H. Ejiri, K. Katori, S. Mizutori, and H. Ueno, Phys. Rev. **C62**(2000)044314

Statistical Calculations of Nuclear Fragment Distributions; S. Pratt and S. Das Gupta, Phys. Rev. **C62**(2000)044603

Proton Decay Following the Transfer Reaction ( $^7\text{Li}, ^6\text{He}$ ) on  $^{40}\text{Ca}$  and  $^{90}\text{Zr}$ ; G.H. Yoo, G.M. Crawley, J.H. Kelley, N.A. Orr, J.C. Stako, J.S. Winfield, S. Gal s, S. Fortier, H. Laurent, T. Suomij rvi, and J.E. Finck, Phys. Rev. **C62**(2000)044604

Spin and Excitation Energy Dependence of Fission Survival for the  $^{19}\text{F} + ^{175}\text{Lu}$  System; S.K. Hui, C.R. Bhuinya, A.K. Ganguly, N. Madhavan, J.J. Das, P. Sugathan, D.O. Kataria, S. Murlithar, L.T. Baby, V. Tripathi, A. Jhingan, A.K. Sinha, P.V. Madhusudhana Rao, N.V.S.V. Prasad, A.M. VinodKumar, R. Singh, M. Thoennessen, and G. Gervais, Phys. Rev. **C62**(2000)054604

Dissociation of  $^8\text{He}$ ; Y. Iwata, K. Ieki, A. Galonsky, J. J. Kruse, J. Wang, R.H. White-Stevens, E. Tryggestad, P.D. Zecher, F. De k, . Horv th, . Kiss, Z. Seres, J.J. Kolata, J. von Schwarzenberg, R.E. Warner, and H. Schelin, Phys. Rev. **C62**(2000)064311

Beta Decay of  $^{98}\text{Ag}$ : Evidence for the Gamow-Teller Resonance near  $^{100}\text{Sn}$ ; Z. Hu, L. Batist, J. Agramunt, A. Algora, B.A. Brown, D. Cano-Ott, R. Collatz, A. Gadea, M. Gierlik, M. G rska, H. Grawe, M. Hellstr m, Z. Janas, M. Karny, R. Kirchner, F. Moroz, A. Pochocki, M. Rejmund, E. Roeckl, B. Rubio, M. Shibata, J. Szerypo, J.L. Tain, and V. Wittmann, Phys. Rev. **C62**(2000)064315

Nuclear Isotope Thermometry; S.R. Souza, W.P. Tan, R. Donangelo, C.K. Gelbke, W.G. Lynch, and M. B. Tsang, Phys. Rev. **C62**(2000)064607

Rare Isotope Production Near the Neutron Drip Line; W.A. Friedman, M.B. Tsang, D. Bazin, and W.G. Lynch, Phys. Rev. **C62**(2000)064609

#### (e) Nuclear Physics A

Particle-Core Coupling Around  $^{68}\text{Ni}$ : A Study of the Subshell Closure at  $N=40$ ; A.M. Oros-Peusquens and P.F. Mantica, Nucl. Phys. **A669**(2000)81

Multiple Pion Production from an Oriented Chiral Condensate; A. Volya, S. Pratt, and V. Zelevinsky, Nucl. Phys. **A671**(2000)617

Determination of the Mean-Field Momentum-Dependence using Elliptic Flow; P. Danielewicz, Nucl. Phys. **A673**(2000)375

#### (f) Nuclear Instruments and Methods

Comparison of Two Liquid Scintillators Used for Neutron Detection; A. Horvath, K. Ieki, Y. Iwata, J.J. Kruse, Z. Seres, J. Wang, J. Weiner, P.D. Zecher, and A. Galonsky, Nucl. Instrum. Methods **A440**(2000)241

Silicon-CsI Detector Array for Heavy Ion Reactions; E. Norbeck, L.B. Yang, P.I. Pogodin, Y.W. Cheng, F.D. Ingram, O. Bjarki, S. Grevy, D.J. Magestro, A.M. Vander Molen, and G.D. Westfall, Nucl. Instr. and Meth. **A452**(2000)239

Energy Resolution and Energy-Light Response of CsI(Tl) Scintillators for Charged Particle Detection; A. Wagner, W.P. Tan, K. Chalut, R.J. Charity, B. Davin, Y. Laroche, M.D. Lennek, T.X. Liu, X.D. Liu, W.G. Lynch, A.M. Ramos, R. Shomin, L.G. Sobotka, R.T. de Souza, M.B. Tsang, G. Verde, and H.S. Xu, Nucl. Instr. and Meth. **A456**(2000)282

#### (g) Other Journals

Pulsed Magnetic Field Method for Determining Polarization of Radioactive Beams; D.W. Anthony, P.F. Mantica, D.J. Morrissey, and G. Georgiev, Hyperfine Int. **127**(2000)485

$^{81}\text{Kr}$  in the Great Artesian Basin, Australia: A New Method for Dating Very Old Groundwaters; P. Collon, W. Kutschera, H.H. Loosli, B.E. Lehmann, R. Purtschert, A. Love, L. Sampson, D. Anthony, D. Cole, B. Davis, M. Fauerbach, D.J. Morrissey, B. Sherrill, M. Steiner, R.C. Pardo, and M. Paul, Earth and Planetary Science Letters **182**(2000)103

Effect of Cluster Formation on Isospin Asymmetry in the Liquid-Gas Phase Transition Region; L. Shi and P. Danielewicz, Europhys. Lett. **51**(2000)34

Break-Up of Neutron-Halo Nuclei by Diffraction Dissociation and Shakeoff; F. Barranco and P.G. Hansen, Eur. Phys. J. **A7**(2000)479

Measurement of the Electric Quadrupole Moments of  $^{26-29}\text{Na}$ ; M. Keim, U. Georg, A. Klein, R. Neugart, M. Neuroth, S. Wilbert, P. Lievens, L. Vermeeren, and B.A. Brown, Eur. Phys. J. **A8**(2000)31

Phase Transitions in a Two-Component Site-Bond Percolation Model; H.M. Harreis and W. Bauer, Phys. Rev. **B62**(2000)8719

Space Charge Calculations for Sub-Three-Dimensional Particle-in-Cell Code; L.G. Vorobiev and R.C. York, Phys. Rev. Special Topics - Accelerators and Beams **3**(2000)114201

Fringe Field Effects in Small Rings of Large Acceptance; M. Berz, B. Erdelyi, and K. Makino, Phys. Rev. Special Topics - Accelerators and Beams **3**(2000)124001

Nonarchimedean Analysis and Rigorous Computation; M. Berz, International Journal of Applied Mathematics **2**(2000)889

Power Series on the Levi-Civita Field; K. Shamseddine and M. Berz, International Journal of Applied Mathematics **2**(2000)931

Implementing a Large On-Campus ALN: Faculty Perspective; E. Kashy, M. Thoennessen, G. Albertelli, and Y. Tsai, Journal of Asynchronous Learning Networks, Volume **4**, Issue 3, ISSN 1092-8235 (2000).

#### **CONFERENCE PROCEEDINGS - INVITED TALKS - 2000**

New Possibilities for Nuclear Physics Experiments with Novosibirsk Race-Track Microtron-Recuperator; V.F. Dmitriev, G.N. Kulipanov, D.M. Nikolenko, I.A. Rachek, A.N. Skrinsky, D.K.

Toporkov, N.A. Vinokurov and V.G. Zelevinsky, in PANIC '99: Proceedings of the 15th International Conference on Particles and Nuclei. Uppsala, Sweden, June 10-16, 1999, edited by G. F. Ildt, B. H. Istad, and S. Kullander; Nucl. Phys. **A663-664**(2000)1099c

Particle-Unbound Clusters Far-Off Stability; P.G. Thirolf, M.J. Chromik, M. Thoennessen, M. Fauerbach, T. Glasmacher, R. Ibbotson, R.A. Kryger, H. Scheit, and P.J. Woods, in Proceedings of the 7th International Conference on Clustering Aspects of Nuclear Structure and Dynamics, Rab, Croatia, June 14-19, 1999, edited by M. Korolija, Z. Basrak, and R. Caplar (World Scientific Publishing, Singapore, 2000), p. 221

First Excited States in Neutron-Rich Neon and Sodium Isotopes; B.V. Pritychenko, T. Glasmacher, R.W. Ibbotson, H. Scheit, P.D. Cottle, and K.W. Kemper, in Proceedings of the Conference on Fission and Neutron-Rich Nuclei, St. Andrews, Great Britain, June 28-July 3, 1999, edited by J.H. Hamilton, W.R. Phillips, and H.K. Carter (World Scientific Publishing, Singapore, 2000), p. 393

Charge and Mass Distributions of Fission Fragments from Intermediate Energy Collisions of  $^{238}\text{U}$  Projectiles. Generation of Very Neutron-Rich Nuclei; G.A. Souliotis, W. Loveland, K.E. Zyromski, G.J. Wozniak, D.J. Morrissey, J.O. Liljenzin, and K. Aleklett, *ibid*, p. 478

#Chemical Modification of DNA Due to Charged Particle Tracks: Relation Between Radiation Quality and Radical Formation; M.D. Sevilla, K. Carpenter, and D. Becker, in "Radiation Research," Proceedings of the 11th International Congress of Radiation Research, Dublin, Ireland, July 18-23, 1999, edited by M. Moriarty et al. (Allen Press, 2000) p. 107

Implementing a Large On-Campus ALN: Faculty Perspective; E. Kashy, M. Thoennessen, G. Albertelli, and Y. Tsai, in "On-Line Education: Learning Effectiveness and Faculty Satisfaction", Proceedings of the 1999 Sloan Summer Workshop on Asynchronous Learning Networks, Urbana, Illinois, August 16-18, 1999, edited by John Bourne (The Sloan Consortium, ALN Center, 2000), p.225

Deuteron Formation in Heavy Ion Collisions within the Faddeev Approach; M. Beyer, C. Kuhrtz, G. Roepke, and P.D. Danielewicz, in "Progress in Nonequilibrium Green's Functions," Proceedings of the Conference on Kadanoff-Baym Equations -- Progress and Perspectives for Many-Body Physics, Rostock, Germany, September 20-24, 1999, edited by M. Bonitz (World Scientific Publishing, Singapore, 2000), p. 383

Fringe Field Effects in Muon Rings; M. Berz, K. Makino, and E. Erdelyi, in "Colliders and Collider Physics at the Highest Energies," Proceedings of the 1999 Muon Collider Collaboration Meeting, Montauk, New York, September 27 - October 1, 1999, edited by B.J. King; AIP Conference Proceedings, Vol. 530 (AIP, New York, 2000), p. 38

Two-Proton Decay Experiments at MSU; M. Thoennessen, M.J. Chromik, and P.G. Thirolf, in Proceedings of the International Symposium on Proton Emitting Nuclei, Oak Ridge, Tennessee, October 7-9, 1999, edited by J. Batchelder, AIP Conference Proceedings 518 (American Institute of Physics, New York, 2000), p. 105.

#Negative heat Capacity in the Critical Region of Nuclear Fragmentation: An Experimental Evidence of the Liquid-Gas Phase Transition; M. D'Agostino, F. Gulminelli, P. Chomaz, M. Bruno, F. Cannata, N. Le Neindre, R. Bougault, M.L. Fiandri, E. Fuschini, F. Gramegna, I. Iori, G.V. Margagliotti, A. Moroni, G. Vannini, and E. Verondini, in Proceedings of the XXXVIII International Winter Meeting on Nuclear Physics, Bormio, Italy, January 24-29, 2000, edited by I. Iori and A. Moroni, *Ricerca Scientifica ed Educazione Permanente*, Suppl. N. 116 (1999), p. 386

Synthesis of Mean-Field and Shell-Model Configuration Mixing Methods; B.A. Brown, in Proceedings of the RIKEN Symposium, March 5-8, 2000, Tokyo, Japan; RIKEN Review 26(2000)53

K-factors and Reference Frames: Common Problems for Transport Theory at RHIC; S.A. Bass, in Proceedings of RHIC 2000, Fifth RHIC/INT Workshop, Park City, Utah, March 2000, edited by W. Bauer; published on-line at URL: <http://theo08.nsl.mscl.msu.edu/rhic2k/proceedings.htm>

EOS at AGS Energies; P. Bozek, P. Danielewicz, and P.-B. Gossiaux, *ibid.*

Generating Physics Conclusions from RHIC; S. Pratt, *ibid.*

Rare Isotope Accelerator (RIA); G.D. Westfall, *ibid.*

#Odd-Even Z Effects in the Abundance of Fragments from Heavy Nuclei; E. Norbeck, *ibid.*

Physics Opportunities with Fast Beams of Rare Isotopes; C.K. Gelbke, in Proceedings of the Congress of the Canadian Association of Physicists, Toronto, Canada, June 4-7, 2000; *Physics in Canada* **56**(2000)67

Quantum M nchhausen Effect: Radiative Corrections Increase Tunneling Probability; V. Flambaum and V. Zelevinsky, in Proceedings of the XVII International Conference on Atomic Physics, Florence, Italy, June 4-9, 2000, p. 537

Recent Developments in the Nuclear Shell Model; B.A. Brown, in Proceedings of the Ninth International Conference on Nuclear Reaction Mechanisms, Varenna, Italy, June 5-9, 2000, edited by E. Gadioli; *Ricerca Scientifica ed Educazione Permanente*, Supplemento N. 115(2000)61

Displacement Energies, RMS Radii, and Charge Densities; W.A. Richter, B.A. Brown, and R. Lindsay, *ibid.*; *Ricerca Scientifica ed Educazione Permanente*, Supplemento N. 115(2000)71

N=Z Nuclei in Nuclear Astrophysics; H. Schatz, in Proceedings of the International Workshop on Selected Topics on N=Z Nuclei, Lund, Sweden, June 6-10, 2000; posted at: <http://pingst2000.kosufy.lu.se/proceedings/schatz.pdf>

ALN Technology on Campus: Successes and Problems; E. Kashy, G. Albertelli, M. Thoennessen, Y. Tsai, and D.A. Kashy, in Proceedings of the 30th ASEE/IEEE Frontiers in Education Conference, Kansas City, Missouri, October 18-21, 2000 (IEEE 0-7803-6424, 2000).

Dissemination of On-Campus ALN: Successes and Misconceptions; M. Thoennessen, E. Kashy, G. Albertelli, and F. Berryman, in Proceedings of the Sixth International Conference on Asynchronous Learning Networks, Adelphi, Maryland, November 3-5, 2000; website: <http://www.aln.org/alnconf2000/> (2000)

### **CONFERENCE PROCEEDINGS - CONTRIBUTED PAPERS - 2000**

Doubly-Deformed Bands in Doubly-Magic  $^{56}\text{Ni}$ ; T. Mizusaki, T. Otsuka, M. Honma, and B.A. Brown, in Proceedings of Conference, Crete, July 1999; *Physica Scripta* **T88**(2000)107

A Study of the Decay of  $^{19}\text{N}$ ; D.W. Anthony, D.J. Morrissey, P.A. Lofy, P.F. Mantica, J.I. Prisciandaro, J.M. D'Auria, and U. Giesen, in Proceedings of the American Chemical Society Symposium on the Origin of Elements in the Solar System, New Orleans, Louisiana, August 22-26, 1999, in press (2000).

Effects of Kinematic Correction on the Dynamics in Muon Rings; K. Makino and M. Berz, in "Colliders and Collider Physics at the Highest Energies," Proceedings of the 1999 Muon Collider Collaboration

Meeting, Montauk, New York, September 27 - October 1, 1999, edited by B.J. King; AIP Conference Proceedings, Vol. 530 (AIP, New York, 2000), p. 217

Zero-Magnetic Field Method for Measuring Polarization of Radioactive Beams; D.W. Anthony, P.F. Mantica, D.J. Morrissey, and G. Georgiev, Proceedings of APAC'99, Buddenheim, Germany, September 19-24, 1999, Hyperfine Interactions, in press(1999).

A Compact Sweeper Magnet for Nuclear Physics; A.F. Zeller, J.C. DeKamp, M. Thoennessen, B. M. Sherrill, P.G. Hansen, M. Bird, Y. Eyassa, S.W. Van Sciver, and K.W. Kemper, in Proceedings of the 1999 Cryogenic Engineering and International Cryogenic Materials Conference; Advances in Cryogenic Engineering, Plenum Press (2000)

### **ABSTRACTS OF CONTRIBUTED PAPERS**

Isotope Ratio Measurements in  $^{106,114}\text{Cd} + ^{98,92}\text{Mo}$  Reactions at 50 MeV/A; B. Davin, R. Alfaro-Molina, L. Beaulieu, R.T. DeSouza, L. Gelovani, Y. Larochelle, T. Lefort, V.E. Viola, R. Yanez, C.K. Chalut, C.K. Gelbke, T.X. Liu, X.D. Liu, W.G. Lynch, A. Vander Molen, M. Ramos, R. Shomin, W.P. Tan, M.B. Tsang, A. Wagner, H.F. Xi, H.S. Xu, R.J. Charity, and L.G. Sobotka, Bull. Am. Phys. Soc. **45**(2000)115

Isospin Fractionation in Nuclear Multifragmentation; H.S. Xu, M.B. Tsang, T.X. Liu, X.D. Liu, W.G. Lynch, W.P. Tan, G. Verde, A. VanderMolen, A. Wagner, H.F. Xi, C.K. Gelbke, L. Beaulieu, B. Davin, Y. Larochelle, T. Lefort, R.T. de Souza, R. Yanez, V. Viola, R.J. Charity, and L.G. Sobotka, Bull. Am. Phys. Soc. **45**(2000)115

Intermediate-Energy Coulomb Excitation of the Odd Neutron-Rich Isotopes  $^{31,33}\text{Mg}$  and  $^{34,35}\text{Al}$ ; B.V. Pritychenko, T. Glasmacher, R.W. Ibbotson, A. Sakharuk, H. Scheit, V.G. Zelevinsky, P.D. Cottle, and K.W. Kemper, Bull. Am. Phys. Soc. **45**(2000)115

Nuclear Isotope Thermometry and the Finite-Size Effects; Wanpeng Tan, W. Lynch, M.B. Tsang, S.R. Souza, and R. Donangelo, Bull. Am. Phys. Soc. **45**(2000)117

Structure of the Particle-Unbound Nuclei  $^{7,9}\text{He}$  and  $^{10}\text{Li}$ ; M. Thoennessen, L. Chen, T. Aumann, B. Blank, M. Chartier, A. Galonsky, P.G. Hansen, J. Kruse, V. Maddalena, K. Ieki, Y. Iwata, Y. Higurashi, S. Takeuchi, F. Deak, A. Horvath, A. Kiss, and Z. Seres, Bull. Am. Phys. Soc. **45**(2000)147

Molecular Orbital Model for Be Isotopes; A. Sakharuk and V. Zelevinsky, Bull. Am. Phys. Soc. **45**(2000)154

Measurement of the  $2^+$  Magnetic Moments in Even-Even Mo Isotopes; D.E. Groh, P.F. Mantica, J.I. Prisciandaro, A.E. Stuchbery, and M.P. Robinson, Bull. Am. Phys. Soc. **45**(2000) #5, p. 37

Temperature dependence of the GDR width in  $^{120}\text{Sn}$ ; P. Heckman, D. Bazin, Y. Blumenfeld, M.J. Chromik, T. Nakamura, A. Navin, B.M. Sherrill, M. Thoennessen, E. Tryggstad, J.R. Beene, R.L. Varner, M.L. Halbert, J.F. Liang, E. Mohrmann, and K.A. Snover, Bull. Am. Phys. Soc. **45**(2000) #5, p. 37

The High Resolution Array HiRA; M.-J. Van Goethem, A. Caraley, R.J. Charity, R.T. DeSouza, P. Hosmer, W. Lynch, A. Moroni, L.G. Sobotka, G. Verde, V.E. Viola, and M. Wallace, Bull. Am. Phys. Soc. **45**(2000) #5, p. 37



Determination of Segment Positions for a High-Purity Segmented Germanium Detector; K.L. Miller, T. Glasmacher, J. Enders, W.F. Mueller, E. Strahler, and C. Campbell, Bull. Am. Phys. Soc. **45**(2000) #5, p. 37

Development of a New Neutron Wall for the NSCL; T. Baumann, Bull. Am. Phys. Soc. **45**(2000) #5, p. 37

A Thin Frozen Hydrogen Target; M. Wallace, H. Laumer, W. Lynch, B. Sherrill, and A. Zeller, Bull. Am. Phys. Soc. **45**(2000) #5, p. 37

Total Reaction and Neutron-Removal Cross Sections of 30A-60A MeV Be Isotopes on Si and Pb; R.E. Warner, M.H. McKinnon, J.S. Needleman, N.C. Shaner, F.D. Becchetti, A. Nadasen, D.A. Roberts, A. Galonsky, R.M. Ronningen, M. Steiner, J.A. Brown, J.J. Kolata, and K. Subotic, Bull. Am. Phys. Soc. **45**(2000) #5, p. 39

Two-Particle Correlations for Krypton on Niobium and Argon on Scandium; R.J. Shomin, G.J. Kunde, S. Fritz, H. Xi, W.G. Lynch, M.B. Tsang, C.K. Gelbke, C. Schwarz, G.D. Westfall, and G. Racitti, Bull. Am. Phys. Soc. **45**(2000) #5, p. 39

Imaging of Emitting Sources in Heavy Ion Collisions by d-alpha Correlation Functions; G. Verde, D.A. Brown, P. Danielewicz, C.K. Gelbke, T.X. Liu, X.D. Liu, W.G. Lynch, W.P. Tan, M.B. Tsang, H.S. Xu, H.F. Xi, B. David, R.T. de Souza, Y. Larochelle, R.J. Charity, and L.G. Sobotka, Bull. Am. Phys. Soc. **45**(2000) #5, p. 40

Determination of the Isospin Dependence of the EOS with Isotopic Distributions; Wanpeng Tan, W.G. Lynch, C.K. Gelbke, P. Hosmer, M.B. Tsang, D. Zhabinski, and B.-A. Li, Bull. Am. Phys. Soc. **45**(2000) #5, p. 40

Isotope Scaling in Nuclear Reactions; M.B. Tsang, W.A. Friedman, C.K. Gelbke, W.G. Lynch, G. Verde, and H.S. Xu, Bull. Am. Phys. Soc. **45**(2000) #5, p. 40

The Rate of the  ${}^7\text{Be}(p, \_){}^8\text{B}$  Reaction from an Exclusive Measurement of the Coulomb Dissociation of  ${}^8\text{B}$ ; B. Davids, S.M. Austin, R.R.C. Clement, B.M. Sherrill, D.W. Anthony, P.A. Lofy, T. Aumann, T. Baumann, D. Bazin, T. Nakamura, J. Yurkon, C.N. Davids, and H. Esbensen, Bull. Am. Phys. Soc. **45**(2000) #5, p. 44

Nuclear Charge Density Profiles and rms Radii; W.A. Richter and B.A. Brown, Bull. Am. Phys. Soc. **45**(2000) #5, p. 63

The Regulating Role of Geometric Chaoticity in Randomly Interacting Fermionic Systems; D. Mulhall, A. Volya, and V. Zelevinsky, Bull. Am. Phys. Soc. **45**(2000) #5, p. 63

Exact and Approximate Solutions of the Nuclear Pairing Problem; A. Volya, V. Zelevinsky, and B.A. Brown, Bull. Am. Phys. Soc. **45**(2000) #5, p. 63

Beyond the Neutron Drip Line: Use of Final State Interactions for Identifying  $l=0$  States in Particle-Unbound Systems; P.G. Hansen, B. Blank, B.A. Brown, L. Chen, M. Chartier, A. Galonsky, and M. Thoennessen, Bull. Am. Phys. Soc. **45**(2000) #5, p. 68

Beta-delayed Neutron Spectroscopy of  ${}^{19,20}\text{N}$ ; D.J. Morrissey, D. Anthony, and P.A. Lofy, Bull. Am. Phys. Soc. **45**(2000) #5, p. 68

Dipole Strength Function in  $^{20}\text{O}$ ; E. Tryggestad, T. Aumann, D. Bazin, Y. Blumenfeld, M. Chartier, P. Heckman, B.M. Sherrill, M. Thoennessen, J.R. Beene, D.C. Radford, D. Shapira, R.L. Varner, M. Halbert, and J.F. Liang, *Bull. Am. Phys. Soc.* **45**(2000) #5, p. 69

Gamma-ray Spectroscopy Around the "Island of Inversion"; T. Glasmacher, R.W. Ibbotson, B. Pritychenko, P.D. Cottle, and K.W. Kemper, *Bull. Am. Phys. Soc.* **45**(2000) #5, p. 69

Proton Scattering on  $^{32,34}\text{Si}$  in Inverse Kinematics; Z. Hu, T. Glasmacher, M. Chromik, R.W. Ibbotson, H. Scheit (Michigan State University), P.D. Cottle, and K.W. Kemper, *Bull. Am. Phys. Soc.* **45**(2000) #5, p. 69

One-Neutron Removal from  $^{34,35}\text{Si}$  and  $^{37}\text{S}$ ; J. Enders, A. Bauer, D.W. Anthony, T. Aumann, D. Bazin, Y. Blumenfeld, B.A. Brown, T. Glasmacher, P.G. Hansen, R.W. Ibbotson, P.A. Lofy, V. Maddalena, K.L. Miller, T. Nakamura, A. Navin, B.V. Pritychenko, B.M. Sherrill, E.J. Spears, M. Steiner, J. Yurkon, A. Wagner, and J.A. Tostevin, *Bull. Am. Phys. Soc.* **45**(2000) #5, p. 69

Beta Decay of Neutron-Rich Vanadium Isotopes; P.F. Mantica, J.I. Prisciandaro, D.W. Anthony, D.E. Groh, P.A. Lofy, A.M. Oros-Peusquens, S.L. Tabor, M.W. Cooper, J. Gonzalez, M. Wiedeking, A. Garcia, and A. Komives, *Bull. Am. Phys. Soc.* **45**(2000) #5, p. 70

Splitting of the Dipole and Spin Dipole Resonances in Pb; S.M. Austin, *Bull. Am. Phys. Soc.* **45**(2000) #5, p. 70

J-Dependence of the Shell Model Nuclear Level Density; M. Horoi, J. Kaiser, and V. Zelevinsky, *Bull. Am. Phys. Soc.* **45**(2000) #5, p. 78

Rare Isotope Production Near the Neutron Drip Line; W.A. Friedman, M.B. Tsang, D. Bazin, W.G. Lynch, and Gail Renault, *Bull. Am. Phys. Soc.* **45**(2000) #5, p. 82

One-Nucleon Knockout Reactions: An Overview of Recent Results Obtained on the Structure of Rare Isotopes Close to the Drip-Lines; P.G. Hansen, B.M. Sherrill, B.A. Brown, T. Aumann, J.A. Tostevin, A. Navin, T. Glasmacher, and V. Maddalena, *Bull. Am. Phys. Soc.* **45**(2000) #5, p. 82

Clocking Hadronization in Relativistic Heavy Ion Collisions with Balance Functions; S.A. Bass, P. Danielewicz, and S. Pratt, *Bull. Am. Phys. Soc.* **45**(2000) #5, p. 86

## **CHAPTER IN BOOK**

Melding Network Technology with Traditional Teaching: Enhanced Achievement in a 500-Student Course; E. Kashy, M. Thoennessen, Y. Tsai, N.E. Davis, and G. Albertelli II, chapter in "Interactive Learning: Vignettes from America's Most Wired Campuses," edited by D.G. Brown, ISBN 1-882982-29-0 (Anker Publishing Company, Boston, 2000), p. 51

Constructive Generation and Verification of Lyapunov Functions Around Fixed Points of Nonlinear Dynamical Systems; M. Berz and K. Makino, in "System Control: Theory and Applications," edited by N.E. Mastorakis (World Scientific and Engineering Society Press, Singapore, 2000), p. 19

Verified Global Optimization with Taylor Models; K. Makino and M. Berz, in "Problems in Applied Mathematics," edited by N.E. Mastorakis (World Scientific and Engineering Society Press, Singapore, 2000), p. 253

## **INVITED TALKS - 2000**

Open Questions in Hot GDR Studies; M. Thoennessen, Workshop on Studies of High Energy Gamma-Rays at ATLAS, Argonne, Illinois, January 21-22, 2000.

Determination of the Mean-Field Momentum-Dependence Using Elliptic Flow; P. Danielewicz, XXXVIII International Winter Meeting of Nuclear Physics, Bormio, Italy, January 24-29, 2000.

Isospin Fractionation Effects in Nuclear Multifragmentation; W.G. Lynch, *ibid.*

#Negative Heat Capacity in the Critical Region of Nuclear Fragmentation: An Experimental Evidence of the Liquid-Gas Phase Transition; M. D'Agostino, *ibid.*

Determination of the Mean-Field Momentum-Dependence Using Elliptic Flow; P. Danielewicz, Workshop on the Nuclear Equation-of-State: Status and Perspectives, Darmstadt, Germany, February 20-23, 2000.

The Future of the Nuclear Shell Model; B.A. Brown, Riken Symposium: Shell Model 2000, Tokyo, Japan, March 5-8, 2000.

Isospin Fractionation in Multifragmentation; M.B. Tsang, Indra Workshop, Caen, France, March 8-10, 2000.

Nuclear Dynamics and Many-Body Quantum Chaos; V. Zelevinsky, Workshop on Complex Systems and Quantum Chaos (INT-18W), Seattle, Washington, March 13, 2000.

Coulomb Excitation with Fast Exotic Beams Using Position-Sensitive  $\gamma$ -Ray Detectors; T. Glasmacher, 219th National American Chemical Society Meeting, San Francisco, California, March 26-30, 2000.

Magnetic Moments of Radioactive Nuclei Using Beta-NMR Spectroscopy; P.F. Mantica, *ibid.*

Direct Reactions with Exotic Beams: New Tools for Nuclear Structure; D.J. Morrissey, *ibid.*

Recoil Separators for Nuclear Science; B.M. Sherrill, *ibid.*

Nuclear Science Experiments with a High Resolution Charged Particle Array; M.B. Tsang, *ibid.*

#An Experimental Excursion into the Nuclear Exotica; A. Navin, Workshop on Physics of Hadrons and Nuclei, Calcutta, March 29-31, 2000

K-factors and Reference Frames: Common Problems for Transport Theory at RHIC; S.A. Bass, RHIC 2000, Fifth RHIC/INT Workshop, Park City, Utah, March 2000

EOS at AGS Energies; P. Bozek, *ibid.*

Generating Physics Conclusions from RHIC; S. Pratt, *ibid.*

Rare Isotope Accelerator (RIA); G.D. Westfall, *ibid.*

#Odd-Even Z Effects in the Abundance of Fragments from Heavy Nuclei; E. Norbeck, *ibid.*

Nuclear Astrophysics with Radioactive Beams; H. Schatz, Fifth International Conference on Radioactive Nuclear Beams (RIB-V), Divonne, France, April 3-8, 2000

Scientific Opportunities with Fast Radioactive Nuclear Beams; B.M. Sherrill, *ibid.*

#Intermediate Energy Coulomb Excitation of  $^{19}\text{Ne}$ ; G. Hackman, Third Workshop on Frontiers of Nuclear Astrophysics, Notre Dame, April 19-20, 2000.

Super Halos: The  $l = 0$  Ground States of the Unbound Nuclei  $^{10}\text{Li}$  and  $^9\text{He}$ ; P.G. Hansen, Halo-2000, Brussels, Belgium, April 28-30, 2000.

Effects of Fringe Fields on Muon Ring Dynamics; M. Berz, American Physical Society Meeting, Long Beach, California, April 29 - May 2, 2000

Differential Algebra Based on Magnetic Field Computations and Accurate Fringe Field Maps; B. Erdelyi, *ibid.*

Radioactive Beams from the NSCL Coupled Cyclotron Project; B. Sherrill, *ibid.*

Experimental Evidence for Dissipation; M. Thoennessen, International Workshop on Transport in Finite Many-Body Systems, Trento, Italy, May 8-20, 2000.

Chaos and Large Amplitude Collective Motion; V. Zelevinsky, *ibid.*

Physics at the Neutron Dripline; T. Glasmacher, International Symposium on Exotic Nuclear Structures, Debrecen, Hungary, May 15-20, 2000.

#Proton Scattering by Unstable Nuclei; Y. Blumenfeld, *ibid.*

Neutron-Proton Correlations near the Coulomb Barrier; P. Danielewicz, International Workshop on Fission Dynamics of Atomic Clusters and Nuclei, Luso, Portugal, May 15-20, 2000.

Common Aspects of Phase Transitions of Molecules, Nuclei, and Hadronic Matter (Conference Summary Talk), W. Bauer, Third Catania Relativistic Ion Studies: Phase Transitions in Strong Interactions Status and Perspectives, Acicastello, Italy, May 22-26, 2000.

Scaling Behavior of Isotopes Produced in Nuclear Reactions; M.B. Tsang, *ibid.*

Isospin Fractionation in Nuclear Fragmentation; G. Verde, *ibid.*

The Disappearance of Flow; G.D. Westfall, *ibid.*

Nonlinear Effects in Neutrino Factories; M. Berz, Neutrino Factory Conference, Monterey, California, May 24, 2000.

Present Status and Future Prospects of Investigations of the Liquid-Gas Phase Transition; C.K. Gelbke, International Conference on the Structure of the Nucleus at the Dawn of the Century, Bologna, Italy, May 29-June 3, 2000.

Physics Beyond the Drip Lines with Fast Exotic Beams; M. Thoennessen, *ibid.*

Learning about the Nuclear Equation of State from the Disappearance of Flow; G.D. Westfall, *ibid.*

Nuclear Structure from the Viewpoint of Quantum Chaos; V. Zelevinsky, *ibid.*

Neutron-Proton Correlations Near the Coulomb Barrier; P. Danielewicz, International Workshop on Nonequilibrium Physics at Short Time Scales, Dresden, Germany, May 29-June 23, 2000.

Physics Opportunities with Fast Beams of Rare Isotopes; C.K. Gelbke, Congress of the Canadian Association of Physicists, Toronto, Canada, June 4-7, 2000.

Recent Developments in the Nuclear Shell Model; B.A. Brown, Ninth International Conference on Nuclear Reaction Mechanisms, Varenna, Italy, June 5-9, 2000.

The Neutron Density of  $^{208}\text{Pb}$ ; B.A. Brown, International Workshop on Parity Violation in Atomic, Nuclear, and Hadronic Systems, Trento, Italy, June 5-17, 2000.

N=Z Nuclei in Nuclear Astrophysics; H. Schatz, International Workshop on Selected Topics on N=Z Nuclei, Lund, Sweden, June 6-10, 2000

Searching for the Phase Transition at the AGS; P. Danielewicz, Workshop OSCAR III on "Simulations for RHIC and LHC", Nantes, France, June 6-16, 2000.

Balance Functions, a Signal of Late-Stage Hadronization; S. Pratt, *ibid.*

Structure of the Halo Nucleus  $^6\text{He}$  Studied via the  $^6\text{Li}(t, ^3\text{He})^6\text{He}$  Reaction; T. Nakamura, International Conference on Giant Resonances (GR2000), Osaka, Japan, June 12-15, 2000.

Recent GDR Experiments at MSU; M. Thoennessen, *ibid.*

#Excitation of the Isovector Giant Quadrupole Resonance in  $^{208}\text{Pb}$  by Coulomb Inelastic Scattering; R. L. Varner, *ibid.*

Verified Integration of Near-Earth Asteroids; M. Berz and K. Makino, World Automation Congress 2000 (WAC2000), Maui, Hawaii, June 14, 2000.

Quantum Chaos and Nuclear Physics; V. Zelevinsky, Nobel Symposium - Quantum Chaos Y2K, B ckaskogs Slott, Sweden, June 16, 2000.

Reactions Opportunities with Radioactive Beams (Panel Discussion); S. Pratt, Gordon Research Conference on Nuclear Chemistry, New London, New Hampshire, June 18-22, 2000.

The Rare Isotope Accelerator Project; B. Sherrill, *ibid.*

Isospin Fractionation in Multifragmentation; M.B. Tsang, *ibid.*

Towards a Universal Data Type for Scientific Computing; M. Berz, Third International Conference on Automatic Differentiation, Nice, France, June 21-23, 2000.

The Endpoint of the rp Process in X-Ray Bursts; H. Schatz, Nuclei in the Cosmos VI, Aarhus, Denmark, June 27 - July 1, 2000

Verified Methods for Control Theory; M. Berz (talk presented by K. Makino), 11th IFAC International Workshop on Control Applications of Optimization (CAO2000), St. Petersburg, Russia, July 3-6, 2000.

Spin Dynamics; M. Berz (talk presented by K. Makino), Conference on Beam Dynamics and Optimization (BDO2000), St. Petersburg, Russia, July 7, 2000.

Nonlinear Effects on the Dynamics in Muon Storage Rings; K. Makino, *ibid.*

Flow and the Equation of State of Nuclear Matter; P. Danielewicz, Seventh International Conference on Nucleus-Nucleus Collisions, Strasbourg, France, July 3-7, 2000.

The Nature of Halo Nuclei; B. Sherrill, *ibid.*

Analysis and Computational Methods for the Levi-Civita Field; M. Berz, 2000 Conference on Nonarchimedean Analysis, Ioannina, Greece, July 6, 2000.

Verified Integration and Taylor Model Methods in Nonlinear Dynamics; M. Berz, WorldSES 2000, Vouliagmeni, Greece, July 10-12, 2000.

Verified Global Optimization with Taylor Model Methods; K. Makino, *ibid.*

Low-Momentum Correlations from Real-Time Theory; P. Danielewicz, Workshop on Equilibrium and Non-Equilibrium Aspects of Hot Dense QCD, Brookhaven National Laboratory, Upton, New York, July 17-30, 2000.

Probing Hadronization with Strangeness; S.A. Bass, Fifth International Conference on Strangeness in Quark Matter, Berkeley, California, July 20-25, 2000.

Verified Integration of ODEs; M. Berz, WCNA 2000, Catania, Italy, July 21, 2000.

The Shell Model for Neutron-Rich Nuclei with RIA; B.A. Brown, National Workshop on the Rare Isotope Accelerator, Durham, North Carolina, July 24-26, 2000.

Exploring the Extremes of Isospin Asymmetry: Summary Presentation of Reactions Working Group; W.G. Lynch, *ibid.*

Probing the Limits of Existence; D.J. Morrissey, *ibid.*

Nuclear Structure Studies with RIA; B.M. Sherrill, *ibid.*

Detector Needs for Fast Beams at RIA; M. Thoennessen, *ibid.*

Isospin Dependence of the Equation of State; M.B. Tsang, *ibid.* (Reactions Working Group).

Methods for Producing Radioactive Nuclear Beams; B.M. Sherrill, Workshop on Future Directions in Nuclear Physics, Darmstadt, Germany, July 2000.

The New Radioactive Beam Facility at the National Superconducting Laboratory, Michigan State University; M.B. Tsang, International Conference on the Role of Physics in the New Millennium: Research, Education & Society, Hong Kong, July 31 - August 4, 2000

Scaling Behavior of Isotopes Produced in Nuclear Reactions; M.B. Tsang, Third Joint Meeting of Chinese Physicists Worldwide, Hong Kong, July 31 - August 4, 2000.

Verified Integration of ODEs; M. Berz, BIT2000, Lund, Sweden, August 10, 2000.

Preservation of Hamiltonian Structure in 3D Curvilinear Dynamics; M. Berz, Ninth International Colloquium on Numerical Analysis and Computer Science with Applications, Plovdiv, Bulgaria, August 12-15, 2000.

Perturbative Equations of Motion and Differential Operators in Nonplanar Curvilinear Coordinates; K. Makino, *ibid.*

Studies of Single-Particle Structure at and Beyond the Drip Lines; P.G. Hansen; Nuclear Structure 2000, East Lansing, Michigan, August 15-19, 2000.

Single-Particle Structure of Neutron-Rich Carbon Isotopes; V. Maddalena, *ibid.*

Detecting Gamma Rays from Fast Exotic Beams for Nuclear Structure Studies; W. Mueller, *ibid.*

Random Interactions: Shedding Light on Nuclear Structure; D. Mulhall, *ibid.*

Nuclear Structure Studies of Mid-Shell, Neutron-Rich Sc, Ti, Cr, and Mn Isotopes via Beta Decay; J. Prisciandaro, *ibid.*

#Using Hadronic and Electromagnetic Probes to Investigate Proton-Neutron Aspects of Transitions in Radioactive Nuclei; P.D. Cottle, *ibid.*

#Intermediate-Energy Coulomb Excitation of  $^{19}\text{Ne}$ ; G. Hackman, *ibid.*

Measurement of High energy Gamma-Rays with GRETA; M. Thoennessen, Workshop on the Physics Opportunities of Gamma-ray Tracking Detectors, East Lansing, Michigan, August 17, 2000

Graduate Education: Preparing the Next Generation of Nuclear Scientists - Then and Now; D.J. Morrissey, American Chemical Society Division of Nuclear Chemistry and Technology Symposium in Memory of Glenn T. Seaborg, Washington, D.C., August 20-22, 2000.

Nuclear Astrophysics and the Nuclear Structure Around  $^{132}\text{Sn}$ ; B.A. Brown, Nucleosynthesis 2000, 220th National American Chemical Society Meeting, Washington, D.C., August 21-23, 2000.

Hydrogen and Helium Burning on Accreting Neutron Stars; H. Schatz, *ibid.*

Generating Scientific Conclusions from Heavy-Ion Collisions at RHIC; S. Pratt, RHIC Users' Meeting and Mini Town Meeting, Upton, New York, August 2000.

Nonlinear Effects in Muon Storage Rings; M. Berz, International Computational Accelerator Conference, Darmstadt, Germany, September 13, 2000.

Higher Order Verified Methods and Applications; M. Berz, SCAN 2000 Interval 2000, Karlsruhe, Germany, September 20, 2000.

Status of the K500xK1200 Coupling Project; H.G. Blosser, European Cyclotron Progress Meeting ECPM XXXII, Berlin, Germany, September 20-23, 2000.

Superconducting Cyclotrons for Cancer Therapy; H.G. Blosser, Workshop on Cyclotrons in Proton Therapy, held at Proton Therapy Co-Operative Group Meeting PTCOG XXXIII, Berlin, Germany, September 25-27, 2000.

The Fragmentation Phase Transition; W. Bauer, Danos Symposium on Fundamental Issues in Elementary Matter, Bad Honnef, Germany, September 2000.

Learning about the Nuclear equation of State from the Disappearance of Flow; G.D. Westfall, *ibid.*

Challenges for the Nuclear Shell Model; B.A. Brown, Fall Meeting of the Division of Nuclear Physics, Williamsburg, October 4-7, 2000.

What is Needed to Implement a Fragmentation Capability at RIA; D.J. Morrissey, *ibid.*

The Ashes of Hydrogen Burning on Accreting Neutron Stars; H. Schatz, *ibid.*

The Nuclear Physics of RIA: Energies of  $\sim 100$ -400 MeV/u; B.M. Sherrill, *ibid.*

Physics of the Rare Isotope Accelerator; M. Thoennessen, Conference Experience for Undergraduates at the 2000 Fall Meeting of the Division of Nuclear Physics, Williamsburg, Virginia, October 4-7, 2000.

Nuclear Astrophysics with Fast Fragmentation Beams; H. Schatz, Workshop on the Future of GSI, Darmstadt, Germany, October 18-20, 2000.

ALN Technology on Campus: Successes and Problems; E. Kashy, 30th ASEE/IEEE Frontiers in Education Conference, Kansas City, Missouri, October 18-21, 2000.

Radioactive-Beam Studies of Single-Particle Structure in Far-Unstable Nuclei; P.G. Hansen, Workshop on Halos, Skins, and Drip Lines, Caen, France, October 30, 2000.

Multimedia Collaborative Content Creation (MC<sup>3</sup>) How We Can Make the Best Use of Each Other's Work; W. Bauer, Fifth Workshop on Multimedia in Physics Teaching and Learning, Vienna, Austria, October 2000.

The Fragmentation Phase Transition; W. Bauer, Sixth International Workshop on Relativistic Aspects of Nuclear Physics, Tabatinga, Brazil, October 2000.

The NSCL Coupled Cyclotron Project: Status and Latest News; T. Baumann, Sixteenth International Conference on the Application of Accelerators in Research and Industry, Denton, Texas, November 1-4, 2000.

Physics Opportunities with an Advanced Rare Isotope Accelerator; C.K. Gelbke, *ibid.*

Rare Ion Beam Physics Experiments at Michigan State; D.J. Morrissey, *ibid.*

Dissemination of On-Campus ALNs: Successes and Misconceptions; M. Thoennessen, Sixth International Conference on Asynchronous Learning Networks, University of Maryland, Adelphi, Maryland, November 3-5, 2000.

Network Technology in Teaching: Assessing Costs and Educational Effectiveness; M. Thoennessen, CEUTT (Cost-Effective Uses of Technology in Teaching) Workshop, Columbia University, New York, New York, November 8, 2000.

Nuclear Reactions with Rare Isotope Beams; W.G. Lynch, Division of Nuclear Physics Town Meeting on Nuclear Structure and Astrophysics, Long Range Plan for Nuclear Science, Oakland, California, November 9-12, 2000.

The rp Process and the Crust of Neutron Stars; H. Schatz, *ibid.*

The Scientific Case for RIA; B.M. Sherrill, *ibid.*

Isospin Dependence of the Equation of State; M.B. Tsang, *ibid.*



In-Beam  $\gamma$ -Ray Spectroscopy with Exotic Beams; T. Glasmacher, International Symposium on Perspectives in Physics With Radioactive Isotope Beams 2000, Hayama, Japan, November 13-16, 2000.

What Are the Major Questions in Radioactive Ion Beam Science?; B. Sherrill, *ibid.*

#Low-Lying States of  ${}^6\text{He}$  Studied via the  ${}^6\text{Li}(t, {}^3\text{He}){}^6\text{He}$  Reaction; T. Nakamura, *ibid.*

Physics with Fragmentation Beams; D.J. Morrissey, ECT Workshop on Physics with Radioactive Beams: Key Experiments and Requirements, Trento, Italy, November 27 - December 1, 2000.

Collective and Chaotic Features of Nuclear Structure; V. Zelevinsky, INT Nuclear Structure Program, Seattle, December 8, 2000

Low Energy Structure of Neutron-Rich Nuclei Near the  $N=40$  Subshell Closure Studied by Beta Decay; P.F. Mantica, Australian Institute of Physics 2000 Conference, Adelaide, Australia, December 11-15, 2000.

Future Plans for Radioactive Beam Facilities in the United States; C.K. Gelbke, Symposium on Science with Radioactive Beams, International Chemical Congress of Pacific Basin Societies, Honolulu, Hawaii, December 14-19, 2000

Towards the Liquid-Gas Phase Transition in Neutron-Rich Matter; W.G. Lynch, *ibid.*