



CGS-12 Special Workshop on Isomers

Sunday, September 4th 2005

Chair: **GEORGE DRACOULIS**

10:00	(10) min	ANI APRAHAMIAN	<i>Welcome and general remarks</i>
10:10	(40+5) min	PHIL WALKER	<i>Nuclear Isomers: Stepping Stones to the Unknown</i>
10:55	(30+5) min	JAMES CARROLL	<i>Status in the Search for the Triggered Depopulation of Nuclear Isomers</i>
11:30	(30+5) min	ANTON TONCHEV	<i>Nuclear Isomers as a Probe for Nuclear Structure and Application Studies</i>
12:05	(30 + 5) min	ADAM HAYES	<i>Violations of K-Conservation in ¹⁷⁸Hf</i>

12:40 Lunch Break

Chair: **UMESH GARG**

13:50	(30+5) min	PARTHA CHOWDHURY	<i>K-Isomers : Navigating an Approximate Symmetry through Spin, Isospin and Oscillator Shells</i>
14:25	(30+5) min	YANG SUN	<i>Challenge in the Theoretical Description of K-Isomers</i>
15:00	(30+5) min	ROBERT GRZYWACZ	<i>Isomer Studies near ⁷⁸Ni and ¹⁰⁰Sn</i>

15:35 Coffee Break

Chair: **YANG SUN**

16:10	(30+5) min	PADDY REGAN	<i>New Opportunities for Isomer Physics using the Stopped RISING Fragmentation Set-up at GSI</i>
16:45	(30+5) min	ART CHAMPAGNE	<i>Isomers and Nuclear Astrophysics</i>



CGS-12 Conference Program

Monday, September 5th 2005

Nuclear Structure I (Isomers and Gamma Spectroscopy)

Chair: **RICK CASTEN**

8:30	(10+5) min	ANI APRAHAMIAN	<i>Welcome and general remarks</i>
8:45	(10+5) min	PROF. ANTHONY HYDER ASSOCIATE VICE PRESIDENT GRADUATE STUDIES AND OFFICE OF RESEARCH	<i>Welcome in Behalf of Notre Dame</i>
9:00	(25+5) min	GEORGE DRACOULIS	<i>Isomers and Aspects of Nuclear Structure</i>
9:30	(25+5) min	JONATHAN BILLOWES	<i>Isomer and Ground State Properties of Yttrium and Scandium Isotopes Measured by Laser Spectroscopy</i>
10:00	(15+5) min	NORBERT PIETRALLA	<i>In-Beam γ-Spectroscopy of Low-Spin Mixed-Symmetry States of ^{138}Ce with Gammasphere in Singles-Mode</i>
10:20	Coffee Break		

Nuclear Structure II : Dedicated to the Memory of D.D. Warner

Chair: **ANI APRAHAMIAN**

11:00	(25+5) min	RICK CASTEN	<i>Emerging Collectivity in Nuclei, Shape Coexistence, and Proton-Neutron Interactions</i>
11:30	(25+5) min	PIET VAN ISACKER	<i>Symmetry and Wigner Energy in Nuclei</i>
12:30	(25+5) min	TAKAHARU OTSUKA	<i>Varying Shell Structure of sd-pf Nuclei</i>
13:00	(25+5) min	ALISON BRUCE	<i>Light Proton Drip Line Nuclei Studied Using Secondary-Fragmentation Reaction at GSI</i>
13:30	Lunch break		

Nuclear Astrophysics I (CNO Cycle)

Chair: **MICHAEL WIESCHER**

14:30	(25+5) min	ART CHAMPAGNE	<i>Seeing the Stars and Capturing Gamma-Rays at LENA</i>
15:00	(15+5) min	HANNS-PETER TRAUTVETTER	<i>Low Energy Underground Study of $^{14}\text{N}(p,\gamma)^{15}\text{O}$ Differential and Total Cross Section at LUNA</i>
15:20	(15+5) min	RALF PLAG	<i>An Independent Measurement of the $^{12}\text{C}(\alpha,\gamma)^{16}\text{O}$ Cross Section with the Karlsruhe 4π BaF₂ Detector</i>
15:40	(15+5) min	AARON COUTURE	<i>$^{19}\text{F}(p,\gamma)$: Putting a Lid on the CNO Cycle</i>

16:00 Coffee break

Fundamental Physics

Chair: **ALAN WUOSMAA**

16:30	(15+5) min	VICTOR FLAMBAUM	<i>Parity and Time Reversal Violation in Atomic Nuclei and Test of the Standard Model</i>
16:50	(15+5) min	PHIL-NEYO SEO	<i>Measurement of Parity-Violating Gamma-ray Asymmetry in Radiative Neutron Capture on Hydrogen at LANSCE</i>
17:10	(15+5) min	RAYMOND MOREH	<i>Scattering of keV Neutrons and the Problem of Quantum Entanglement</i>
17:30	(15+5) min	GARY MITCHELL	<i>Random Matrix Thermodynamics</i>
17:50	(15+5) min	MARCUS MCELLISTREM	<i>Isospin Symmetry of Isobaric Triplets along the $N \sim Z$ Line</i>
18:10	(15+5) min	SADIA CHOUDRY	<i>Study of Charge Symmetry in ^{18}O and ^{18}Ne</i>

18:30 Dinner Break

Data for Nuclear- and Astrophysics Applications with Reception (Room 210 - 214)

Chair: **RICK FIRESTONE**

19:30	(15+5) min	FILIP KONDEV	<i>Nuclear Structure and Decay Data Evaluation: Current Status and Future Perspectives</i>
19:50	(15+5) min	ALEXANDER SUKHARUK	<i>An Updated Library of Reaction Rates for the Astrophysical rp-Process: The Importance for Nuclear Structure Effects</i>
20:10	(15+5) min	IRIS DILLMANN	<i>(n,γ) Cross Sections of Light p Nuclei: Towards an Updated Experimental Database for the s and p Process. and KADoNiS- An Experimental Online Database for the s and p Processes</i>
20:30	(15+5) min	BORIS PRITYCHENKO	<i>Nuclear Data Resources for Capture Gamma-Ray Spectroscopy and Related Topics: Nuclear Reaction and Structure Databases of the National Nuclear Data Center</i>
20:50	(15+5) min	KIM GUINYUN	<i>Measurements of Neutron Capture Cross Sections for Gd Isotopes in the Energy Region from 10 keV to 90 keV</i>

Tuesday, September 6th 2005

Nuclear Masses and Shell Model

Chair: **GRANT MATHEWS**

8:30	(25+5) min	ALEJANDRO FRANK	<i>Nuclear Forecasting as Pattern Recognition: Can we Predict Nuclear Masses?</i>
9:00	(25+5) min	JUHA ÄYSTÖ	<i>Recent Developments in Mass Measurements of Neutron-Rich Nuclei</i>
9:30	(15+5) min	M.B. GOMEZ HORNILLOS	<i>Mass Measurements with the CSS2 & CIME Cyclotrons @ GANIL</i>
9:50	(15+5) min	MILAN MATOS	<i>Recent Achievements and Future of Mass Measurements with Fast Radioactive Beams</i>
10:10	(15+5) min	BRUCE BARRETT	<i>Effective Interactions and Operators in Nuclei within the No-Core Shell Model</i>

10:30 Coffee break

Nuclear Astrophysics II (Charged Particle Reactions and Reaction Rates)

Chair: **ART CHAMPAGNE**

11:00	(15+5) min	WANGPENG TAN	<i>Threshold States in ^{19}Ne and the CNO Breakout Reaction $^{15}\text{O}(\alpha,\gamma)^{19}\text{Ne}$</i>
11:20	(25+5) min	HENDRIK SCHATZ	<i>Nuclear Astrophysics with fast Radioactive Beams</i>
11:50	(15+5) min	YANG SUN	<i>Nuclear Isomers: Structures and Applications</i>
12:10	(15+5) min	GYORGY GYURKY	<i>Radiative Capture Reactions and α-Elastic Scattering on ^{106}Cd for the Astrophysical p-Process</i>
12:30	(25+5) min	ALBERTO MENGONI	<i>Reaction Rates for Stellar Nucleosynthesis</i>

13:00 Lunch break

Nuclear Reactions I (Reactions with Neutron-Rich Nuclei)

Chair: **JERRY WILHELMY**

14:30	(25+5) min	JOLIE CIZEWSKI	<i>Neutron-Transfer Reactions with Exotic Neutron-Rich Beams:</i>
15:00	(15 +5) min	FILOMENA NUNES	<i>Do Halos Exist on the Drip Line of Deformed Nuclei?</i>
15:20	(15 +5) min	PLAMEN BOUTACHKOV	<i>Doppler Shift as a Tool for Studies of Resonant (p,n) Reactions with RIBs, Spectroscopy of ^7He</i>
15:40	(15+5) min	EMIL BETAK	<i>Model Calculations of Radiative Capture of Nucleons in MeV Region</i>

16:00 Coffee break

Nuclear Structure III (0^+ States)

Chair: **GABRIELA POPA**

16:30	(25+5) min	SHELLY LESHER	<i>The Nature of 0^+ States in ^{158}Gd</i>
17:00	(15+5) min	NICOLA LO IUDICE	<i>Pairing Versus Quadrupole Collectivity of Low-Lying 0^+ States in Deformed Nuclei</i>
17:20	(15+5) min	NAOTAKA YOSHINAGA	<i>Recent Progress on the 0^+ Dominance</i>
17:40	(15+5) min	PAUL GARRETT	<i>Gamma-Ray Spectroscopy at TRIUMF-ISAC</i>
18:00	(15+5) min	BRONWYN HYLAND	<i>Precision Branching Ratio Measurement of ^{62}Ga</i>

18:20 Break

19:30 Poster Session During the poster session, there is a reception with food and drinks. The reception starts at 19:00 hours.

There will be a prize of \$500 awarded to the best poster presented by a postdoctoral fellow or a graduate student. A selection committee of 3 distinguished scientists will be judging the posters. The prize is funded by **PROF. STEVEN YATES** of Kentucky University for CGS-12 in honor of the memories of **JEAN KERN** and **RAMAN SUBRAMANIAN** (Founder's Award) and it will be awarded at the banquet.

Wednesday, September 7th 2005

Nuclear Astrophysics III (s-Process Nucleosynthesis)

Chair: **KARL-LUDWIG KRATZ**

8:30	(25+5) min	MICHAEL HEIL	<i>The s Process and its Relation to Explosive Nucleosynthesis</i>
9:00	(15+5) min	ANA ALPIZAR-VINCENTE	<i>Measurement of Neutron Capture Cross Section of ^{62}Ni in the keV Region</i>
9:20	(15+5) min	ROBERT HATARIK	<i>$^{102}\text{Pd}(n,\gamma)$ cross section measurement using DANCE</i>
9:40	(15+5) min	STEFANO MARRONE	<i>Measurement of the $^{139}\text{La}(n,\gamma)$ Cross Section at n_{TOF}</i>
10:00	(15+5) min	CESAR DOMINGO	<i>Measurement of the Resonance Capture Cross Section of $^{204,206}\text{Pb}$ and Termination of the s-Process</i>

10:20 Coffee break

Neutron Capture Reactions I

Chair: **HANS BÖRNER**

11:00	(15+5) min	UNDRAA AGVAANLUVSAN	<i>The Radiative Strength Function Using the Neutron-Capture Reaction on $^{151,153}\text{Eu}$</i>
11:20	(15+5) min	TAMAS BELGYA	<i>Determination of Thermal Neutron Capture Cross Sections Using Cold Neutron Beams at the Budapest PGAA-NIPS Facilities</i>
11:40	(15+5) min	STEPHAN WALTER	<i>Method for (n,γ) Cross Section Measurements on Unstable Isotopes</i>
12:00	(15+5) min	ROBERT RUNDBERG	<i>Neutron Capture Cross Sections of ^{236}U and ^{237}U</i>
12:20	(15+5) min	DANIEL CANO-OTT	<i>Neutron Capture Cross Section Measurements at n_{TOF} of ^{237}Np, ^{240}Pu and ^{243}Am for the Transmutation of Nuclear Waste</i>
12:40	(15+5) min	RON NELSON	<i>Neutron-Induced Gamma-Ray Cross Section Standards and ^{56}Fe Inelastic Scattering</i>

13:00 Lunch break

15:00 Boarding of busses in front of McKenna Hall

15:15 Departure of busses

Conference Excursion to Chicago and Banquet

The conference banquet will take place on board a ship and will include an architectural tour of the city of Chicago from the Chicago River.

Please bring your conference nametag to the excursion!

Thursday, September 8th 2005

Nuclear Structure IV

Chair: **TORBEN LAURITSEN**

8:30	(25+5) min	JAN JOLIE	<i>Level Dynamics of Yrare States</i>
9:00	(15+5) min	VOLKER WERNER	<i>New Findings for Mixed-Symmetry States</i>
9:20	(15+5) min	FRANTISEK BECVAR	<i>Independent Evidence for M1 Scissors Resonances Built on the Levels in the Quasicontinuum of ¹⁶³Dy</i>
9:40	(15+5) min	STEVE YATES	<i>Complex Two-Phonon Structures in ⁹³Nb</i>
10:00	(15+5) min	ANTON TONCHEV	<i>Low-Energy Dipole Modes of Excitation Below the Neutron Separation Energy</i>
10:20	(15+5) min	ADAM HECHT	<i>Search for Enhanced Alpha Preformation in the N=Z+1 nuclei ¹¹³Ba, ¹⁰⁹Xe, ¹⁰⁵Te</i>
10:40		Coffee break	

Neutron Capture Reactions II and Nuclear Structure

Chair: **DENIS DE FRENNE**

11:00	(15+5) min	CHRIS ANGELL	<i>Photo-Induced Population of the $h_{11/2}$ Isomeric States in (γ, n) Reactions</i>
11:20	(15+5) min	VLADIMIR SOLOVYEV	<i>General Approach to Materials Classification Using Neutron Analysis Techniques</i>
11:40	(15+5) min	MASAYUKI IGASHIRA	<i>Measurement of Gamma Rays from keV-Neutron Capture Reaction on Zr-90, 94</i>
12:00	(15+5) min	TOSHIRO OHSAKI	<i>Measurement of Capture Gamma Rays from the 46- and 84-keV Neutron Resonances of ²⁴Mg</i>
12:20	(15+5) min	KIM LISTER	<i>Doorway States in the ¹²C(¹²C, γ)²⁴Mg Radiative Capture Process</i>
12:40	(15+5) min	ZOLTAN ELEKES	<i>Bound Excited States in ²⁷F</i>
13:00		Lunch break	

Application and Development of Nuclear Techniques

Chair: **JAMES KOLATA**

14:30	(15+5) min	RICK FIRESTONE	<i>Thermal Neutron Capture Cross Sections of the Palladium Isotopes</i>
14:50	(25+5) min	JOHN BECKER	<i>Recent experiments on Atomic-Nuclear Coupling</i>
15:20	(15+5) min	JOHN ULLMANN	<i>The Detector for Advanced Neutron Capture Measurements at LANSCE</i>
15:40	(15+5) min	ALEXANDER LAPTEV	<i>Distortion of Pulse-Height Spectra of Neutron Capture Gamma Rays</i>
16:00		Coffee break	

Nuclear Astrophysics IV (r-Process Nucleosynthesis)

Chair: **FRANZ KÄPPELER**

16:30	(25+5) min	KARL-LUDWIG KRATZ	<i>Nuclear-Physics Issues of r-Process Nucleosynthesis</i>
17:00	(15+5) min	KHALIL FAROUQUI	<i>Neutron Captures and the r-Process</i>
17:20	(15+5) min	PETER VON NEUMAN-COSEL	<i>Magnetic Dipole and Gamow-Teller Modes in Neutrino-Nucleus Reactions: Impact on Supernova Dynamics and Nucleosynthesis</i>
17:50	(15+5) min	MOSHE GAI	<i>How Accurately Do We Know the Cross Section of the ${}^7\text{Be}(p,\gamma){}^8\text{Be}$ Reaction?</i>
18:10		Dinner break	

Physics and Film

In the evening, there is the possibility to see movies as a part of the Physics & Film Series (sponsored by JINA and the Physics Department at the performing arts center of the University of Notre Dame).

- 19:00** Metropolis (1926)
- 20:00** The Andromeda Strain (1970)

Friday, September 9th 2005

Nuclear Structure VI (High Spin Experiments)

Chair: NORBERT PIETRALLA

8:30	(25+5) min	ATTILA KRASZNAHORKAY	<i>Hyperdeformed Rotational Bands Observed in the Actinide Region</i>
9:00	(15+5) min	SLAWEK KACZAROWSKI	<i>High Spin Bands in the A ~ 130 Nuclei: A "Non-Chiral" Explanation</i>
9:20	(15+5) min	INDRAMANI GOVIL	<i>Nuclear Structure and Octupole Collectivity in ¹²²Cs Nucleus</i>
9:40	(15+5) min	TORBEN LAURITSEN	<i>Rotational Damping, Ridges and the Quasicontinuum of γ rays in ¹⁵²Dy</i>
10:00	(25+5) min	PADDY REGAN	<i>Multinucleon Transfer Reactions to Study Nuclear Structural Evolution</i>

10:30 Coffee break

Nuclear Structure VII (Theory)

Chair: STEFAN FRAUENDORF

11:00	(25+5) min	NADYA SMIRNOVA	<i>Nuclear Mean Field from the Shell Model Point of View</i>
11:30	(15+5) min	ALEXANDER LISETSKIY	<i>Softness of Doubly-Magic ⁷⁸Ni and Related Topics</i>
11:50	(20+5) min	PAVEL CEJNAR	<i>Regular and Chaotic Nuclear Vibrations: Monodromy, Bifurcations, Regular Islands...</i>
12:20	(15+5) min	VLADIMIR ZELEVINSKY	<i>Shell Model, Nuclear Reactions and Giant Resonances</i>
12:40	(15+5) min	TILL VON EGIDY	<i>Correlation of Nuclear Level Densities and Masses</i>

13:00 Lunch break

Nuclear Reactions II

Chair: FILOMENA NUNES

14:30	(25+5) min	HANS BÖRNER	<i>Precision Gamma-Ray Spectroscopy at the Institut Laue Langevin</i>
15:00	(15+5) min	HENNING ESBENSEN	<i>Radiative Capture versus Coulomb Dissociation Experiments</i>
15:20	(15+5) min	JEFFREY TOSTEVIN	<i>Spectroscopy and Correlation Studies Using Two-Nucleon Knockout</i>
15:40	(15+5) min	PIERRE CAPEL	<i>Influence of the Projectile Description on Breakup Calculations</i>

16:00 Coffee break

Nuclear Structure VIII

Chair: **JAN JOLIE**

16:30	(15+5) min	ALEXENDRU NEGRET	<i>GT strength starting from $^{14}N_{g.s.}$</i>
16:50	(15+5) min	KALIN DRUMEV	<i>Microscopic Calculations for Waiting-Point Nuclei</i>
17:10	(15+5) min	ALEXANDER VOINOV	<i>Level Density and Unusual Low Energy Enhancement of γ-Strength in Iron Isotopes</i>
17:30	(15+5) min	LUCIA-ANA POPESCU	<i>Spin-Isospin Excitations From The Ground-State of ^{64}Ni</i>
17:50			<i>Closing Remarks</i>

20:00 **"A Universe of Dreams" Ensemble Galilei with NPR's Neal Conan at the DeBartolo Performing Arts Center.**
A performance of music, poetry and stories by the Ensemble Galilei with projected images from the Hubble Space Telescope.

End of Conference

Have a Safe Trip Home!