

**Agenda for CINP Board Meeting September 21<sup>st</sup>, 2012**  
**12:30 to 13:55 CDT**

1. Approval of Agenda
2. Approval of Minutes from the June 12<sup>th</sup>, 2012 meeting
3. Announcements and reports
  - WNPPC 2012 Support, TRIUMF Summer Institute, TRIUMF ARIEL Workshop
  - SWG activities
  - Next TRIUMF ACOT meeting (Nov. 30<sup>th</sup>, Dec. 1<sup>st</sup>)
4. Membership
  - Approve new members
    - i. Phillip Voss
    - ii. Ismail Zakout
5. Communications
  - CUPC 2012
  - Visibility: Letter to IUPAP NP working group, short article in NUPEC publication
  - CINP Website
6. Executive Director application
7. Other business
8. Adjourn

***Conference call details:***

*Date: Friday, September 21, 2012 Start Time: 12:30 PM Central Daylight Time*

*End Time: 13:55 PM Central Daylight Time*

*Primary Dial-in Number: 1-800-610-4500 (Toll Free in USA and Canada)*

*Alternate Dial-in Number: 1-702-851-3339 (for callers outside USA and Canada)*

*Access Code: 7915932*



## **Canadian Institute of Nuclear Physics Institut canadien de physique nucléaire**

### **Board of Directors Meeting Calgary, 8:00PM MDT, June 10, 2012**

**Present:** Kumar Sharma (Chair, Manitoba), Paul Garrett (Guelph, via Skype), Garth Huber (Regina), Dave Hornidge (Mt. Allison).

**Absent:** Peter Blunden (Manitoba), Jens Dilling (TRIUMF).

**Observers:** Korina Andreiou (SFU, Nucl Educ SWG Chair), Jean Barrette (McGill), Barry Davids (TRIUMF, Nucl Astro SWG Chair), Krzysztof Starosta (SFU, Nucl Struct SWG Chair).

**Minutes** (taken by GH in absence of PB).

**1 Approval of Agenda as circulated by KS.**

**2 Approval of Minutes of the meeting of February 6, 2012**

**3 Announcements and Reports**

**3.1 Renewed Board Membership from Institutional Members Meeting**

- Paul Garrett and Jens Dilling were re-elected for a second three term by acclamation.

**3.2 CAP 2012 Program**

- Common session with IPP tomorrow will include presentations by SAPES Chair, TRIUMF, SNOLab.
- Sponsored Speaker (Herve Savajols) in the DNP Heavy Ion Reactions II session.
- We reviewed AGM slides prepared by KS.
- Paul Garrett presented updated financial statements (attached).

**3.3 Institutional Members Update**

- PG's financial report led to an extended discussion on overdue membership fees. This is apparently not an uncommon situation, with ACURA having similar difficulty in collecting fees.
- PG reported that there will be a meeting with his Dean in the next two weeks, including Carl Svensson and the Physics Chair. He is hopeful that the Guelph overdue fees will soon be paid.

**4 Discussion on Future CINP Activities**

- Conference/Workshop sponsorship will probably not increase much beyond current \$11k/year, so there was extended discussion on other worthwhile initiatives CINP could support with its NSERC funding. Several ideas were brought forward.

**4.1 NP Grad Class Organization**

- Note that these activities would have to be supported from the CINP's private funds, since academic matters are not NSERC eligible.
- Krzysztof Starosta suggested it would be helpful if CINP could provide logistical support to enable NP grad classes offered at one university to be taken by grad students at another university.
- Extensive discussion on how this could be done, including 2-way conferencing facilities offered by WestGrid, or intensive 2-week class [1 credit hour].
- Paul Garrett has taught two grad classes which included St. Mary's grad students.
  - used Special Topics Grad Class at remote institution.

- instructor did not get credit that extra students were enrolled, local management no sympathetic.
- One historic issue is that it is relatively easy to transfer the credit for the class, but it is nearly impossible to get the remote university to accept the grade given by the other institution's instructor.
- Perhaps a first step could be for the CINP to set up a database of instructor's classes.

#### **4.2 PDF Research Grant**

- IPP has a Theory PDF program, which allows up to 50% support of a PDF for two years, with the supervisor coming up with the remaining funds. The idea being that HEP theorists have relatively small NSERC grants in comparison to experimental PG funds.
- Possibly a good model to follow, since NP groups are smaller than HEP groups.
- May need to wait until next NSERC application, depending on the unspent funds balance.

#### **4.3 Visitors Travel Program**

- Suggested by Corina Andreiou. Provide funds to bring in a visitor from abroad.

### **5 Other Business**

#### **5.1 Membership Approvals**

- GH brought forward three memberships for approval.
  - Blair Jamieson, U.Winnipeg faculty member (0870FE-00100)
  - Stan Yen, TRIUMF research scientist (088-Fe-01101)
  - Anthony Fradette, U.Victoria grad student (089-AT-0000)
    - Note that this applicant was in response to the WNPPC travel award,
  - Approved: GH/DH

#### **5.2 TRIUMF ACOT Meeting**

- Krzysztof Starosta asked what sort of feedback CINP is asked to give at TRIUMF ACOT meetings. KS responded that CINP's opinion is usually not sought out at these meetings.
- It is probably appropriate for CINP to query its members for comments before going to ACOT meeting.



**Canadian Institute of Nuclear Physics  
Institut canadien de physique nucléaire**

**Individual Membership Application Form**

*Please return completed form to CINP Membership Director –  
Send either by surface-mail, or by scanning this signed form and emailing a PDF file:  
Garth Huber (huberg@uregina.ca), Dept. of Physics, University of Regina  
Regina, SK S4S 0A2 Canada*



I, **Philip J. Voss** hereby apply for individual membership in the Canadian Institute of Nuclear Physics, and if granted, I agree to abide by the by-laws of the said Institute. I enclose herewith a completed personal data form.

<b>Full Name:</b>	Philip Jonathan Voss		
<b>Current position:</b>	Postdoctoral Research Fellow		
<b>Date that current position expires:</b>	<b>May 31, 2014</b>		
<b>Institutional Affiliation*:</b>	Simon Fraser University		
<b>Full Postal Address:</b>	Department Of Chemistry		
	8888 University Dr.		
	Burnaby, BC, Canada V5A 1S6		
<b>E-mail Address:</b>	voss@triumf.ca		
<b>Web Address:</b>			
<b>Membership (select one):</b>	<b>FACULTY</b>	<b>ASSOCIATE</b>	<input checked="" type="checkbox"/>

\* Adjunct faculty must choose a single institution with which to register their affiliation.

**Declaration of Availability for Participation**

I declare that 100% (not less than 50%) of my normal research time will be spent on activities which are compatible with the physics interests of the Canadian Institute of Nuclear Physics.

<b>Signed:</b>	
<b>Signature of Immediate Supervisor (if applicable):</b>	
<b>Date:</b>	July 3, 2012

Please complete the personal data form below:

**Personal Data Form**

**1. Positions held in the past 10 years**

Position	Dates (MM/YYYY)	Department and Institution
Undergraduate Student	08/2002-05/2006	Physics, Central Michigan University
Graduate Research Assistant	05/2006-04/2011	Physics, Michigan State University
Postdoctoral Research Fellow	05/2011-Present	Chemistry, Simon Fraser University

**2. Qualifications**

Degree of Diploma	Year	Granting Institution	Field of Specialization
Ph.D. Physics	2011	Michigan State University	Nuclear Physics
B.S. Physics	2006	Central Michigan University	Physics

**Are you currently eligible to hold an NSERC research grant (according to NSERC's stated eligibility criteria)?**

Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
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**3. Brief Outline (not more than 200 words) of your current research interests:**

My research is conducted at TRIUMF and is focused on reduced quadrupole transition strength measurements via lifetime and Coulomb excitation (Coulex) studies using the TIGRESS Integrated Plunger (TIP). TIP, with various target systems and a suite of charged-particle detectors, is uniquely adept for such measurements of exotic isotopes produced by the ISOL technique. My efforts have focused on the commissioning experiments for various TIP components, including Coulex in inverse kinematics with an annular silicon detector, DSAM lifetime measurements with a PIN diode array, and fusion-evaporation studies with CsI detectors for pulse shape analysis.

**4. My interest is primarily in:**

Theory	<input type="checkbox"/>	Experiment	<input checked="" type="checkbox"/>
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**5. Please consider my membership in the following Scientific Working Groups:**

<b>Nuclear Structure</b>	X
<b>Nuclear Astrophysics</b>	
<b>Searches for New Physics</b>	
<b>Hadron Structure/QCD</b>	
<b>Nuclear Physics Education and Training</b>	

**6. Publications and Patents**

Total number of papers published in refereed journals: 1

**On a separate sheet, list in chronological order:**

- Titles of papers published, in press, and/or accepted for publication in refereed journals, for the past 5 years only.
- List of Patents obtained



## Philip J. Voss

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Simon Fraser University  
Department of Chemistry  
8888 University Drive  
Burnaby, BC, Canada V5A 1S6

Office Phone: 1.604.222.1047 x6827  
Email: voss@triumf.ca

### Education

#### **Ph.D. Physics**

Michigan State University (MSU). May 2006 – April 2011.

NSCL/Cyclotron Graduate Fellowship.

Dissertation: Recoil Distance Method Lifetime Measurements via Gamma-Ray and Charged-Particle Spectroscopy at NSCL

#### **B.S. Physics**

Central Michigan University (CMU). August 2002 – May 2006.

Summa Cum Laude.

Honors Thesis: Production Mechanism of  $^{115}\text{In}^m$  in a Predominantly Thermal Neutron Flux

### Research Experience

#### **Simon Fraser University, Postdoctoral Fellow**

TRIUMF, Vancouver, BC, Canada. May 2011 – Present.

My research at TRIUMF is focused on reduced quadrupole transition strength measurements via lifetime and Coulomb excitation (Coulex) studies using the TIGRESS Integrated Plunger. TIP, with various target systems and a suite of charged-particle detectors, is uniquely adept for such measurements of exotic isotopes produced by the ISOL technique. My efforts have focused on the commissioning experiments of various TIP components, including Coulex in inverse kinematics with an annular silicon detector, DSAM lifetime measurements with a PIN diode array, and fusion-evaporation studies with CsI detectors for pulse shape analysis.

#### **Michigan State University, Graduate Research Assistant**

NSCL/MSU, East Lansing, Michigan, USA. May 2006 – April 2011.

My dissertation research centered on Recoil Distance Method (RDM) lifetime studies of exotic isotopes produced by intermediate energy nucleon knockout reactions. Lifetimes of excited nuclear states in  $^{18}\text{C}$  were measured via gamma-ray spectroscopy using the Köln/NSCL plunger coupled to the Segmented Germanium Array and S800 magnetic spectrograph. From the lifetimes, electromagnetic transition rates were directly obtained which play an important role in the understanding of nuclear phenomena and provide valuable discrimination between competing nuclear models. In addition, a novel extension of the Recoil Distance Method via charged-particle spectroscopy of exotic proton emitters was developed. Installing a thin silicon detector on a modified Köln/NSCL plunger permitted the study of the short-lived two-proton emitter  $^{19}\text{Mg}$ . Accurate lifetime determinations in this region of the nuclear chart prove useful in the studies of two-proton decays and rp-process nucleosynthesis reaction rates.

#### **Central Michigan University, Undergraduate Honors Research**

CMU, Mount Pleasant, Michigan, USA. June 2004 – May 2006.

The neutron flux from an americium-beryllium neutron source encased in a paraffin moderator was investigated for my CMU Honors Thesis by measuring the production of the 336 keV metastable state of  $^{115}\text{In}$  in comparison to the neutron-capture production of  $^{116}\text{In}$ . The state was produced by inelastic scattering of fast neutrons and gamma-ray decay spectroscopy was performed with a coaxial high-purity germanium detector in a low-background environment. Concurrently, I was involved with assembly and initial calibration efforts of the MoNA collaboration at NSCL. My experience with MoNA culminated with a paper providing an overview of the collaborations unique model of recruiting and fostering undergraduate involvement in large-scale science at a national laboratory.



## Teaching Experience

**Physics 252 Teaching Assistant.** MSU, Spring 2010.

Three sections of Introductory Physics Lab II for non-science majors.

**Physics Tutor.** CMU, Fall 2004-Spring 2006.

Predominantly students enrolled in Introductory Physics I and II for non-science majors.

## Technical and Computational Proficiencies

### Experimental Systems

Vacuum systems and beam line hardware components, thick ( $\sim 1$  mm) targets and thin ( $\sim 5$   $\mu\text{m}$ ) foils, and both analog and digital data acquisition systems.

### Experimental Devices

Highly-segmented and Compton-suppressed germanium detector arrays, silicon and gas-filled charged particle detectors, plastic scintillators, and magnetic spectrometers.

### Computation Tools

Windows and Unix based operating systems, LaTeX and Microsoft/Open Office Suite, C and C++ programming languages, and analysis and experimental planning software: Geant4, ROOT, Radware, SpecTcl, LISE++, and GOSIA.

## Honors and Awards

**MSU Graduate School Dissertation Completion Fellowship.** MSU, Fall 2010.

**Thomas A. Kaplan Award, Physics Grad. Student Talk of the Year.** MSU, Spring 2010.

**NSCL/Cyclotron Graduate Fellowship.** NSCL, May 2006 – April 2011.

**Graduating Senior Academic Excellence Award.** CMU Honors Program, 2006.

**Kenneth Wright Physics Scholarship.** CMU, Fall 2004 – Spring 2006.

## Professional Affiliations

**Canadian Association of Physicists.** May 2012 – Present.

**Sigma Pi Sigma, National Physics Honors Society.** April 2005 – Present.

## University Service and Public Outreach

**NSCL Tour Guide.** NSCL, Fall 2007 – Fall 2010.

**Graduate Rep., Electronics Committee.** NSCL, Summer 2008 – Spring 2010.

**Graduate Social Chair, MSU Dept. of Physics.** MSU, Summer 2007 – Spring 2010.

**Graduate Rep., Seminar Committee.** NSCL, Summer 2007 – Spring 2008.

**President, Society of Physics Students.** CMU, 2005.

**Treasurer, Society of Physics Students.** CMU, 2004.

## Publications in Refereed Scientific Journals

### 1. Observation of mutually enhanced collectivity in self-conjugate $^{76}_{38}\text{Sr}$

A. Lemasson, H. Iwasaki, C. Morse, D. Bazin, T. Baugher, J.S. Berryman, A. Dewald, C. Fransen, A. Gade, S. McDaniel, A. Nichols, A. Ratkiewicz, S. Stroberg, P. Voss, R. Wadsworth, D. Weisshaar, K. Wimmer, R. Winkler. Phys. Rev. C **85**, 041303(R) (2012).

### 2. Probing Configuration Mixing in $^{12}\text{Be}$ with Gamow-Teller Transition Strength

R. Meharchand, R.G.T. Zegers, B.A. Brown, S.M. Austin, T. Baugher, D. Bazin, J. Deaven, A. Gade, G.F. Grinyer, C.J. Guess, M.E. Howard, H. Iwasaki, S. McDaniel, K. Meierbachtol, G. Perdikakis, J. Pereira, A.M. Prinke, A. Ratkiewicz, A. Signoracci, S. Stroberg, L. Valdez, P. Voss, K.A. Walsh, D. Weisshaar, R. Winkler. Phys. Rev. Lett. **108**, 122501 (2012).

3. **Lifetime Measurement of the  $2_1^+$  State in  $^{20}\text{C}$**   
M. Petri, P. Fallon, A.O. Macchiavelli, S. Paschalis, K. Starosta, T. Baugher, D. Bazin, L. Cartegni, R.M. Clark, H.L. Crawford, M. Cromaz, A. Dewald, A. Gade, G.F. Grinyer, S. Gros, M. Hackstein, H.B. Jeppesen, I.Y. Lee, S. McDaniel, D. Miller, M.M. Rajabali, A. Ratkiewicz, W. Rother, P. Voss, K.A. Walsh, D. Weisshaar, M. Wiedeking, B.A. Brown. *Phys. Rev. Lett* **107**, 102501 (2011).
4. **Enhanced Quadrupole Collectivity at  $N = 40$ : The Case of Neutron-Rich Fe Isotopes**  
W. Rother, A. Dewald, H. Iwasaki, S.M. Lenzi, K. Starosta, D. Bazin, T. Baugher, B.A. Brown, H.L. Crawford, C. Fransen, A. Gade, T.N. Ginter, T. Glasmacher, G.F. Grinyer, M. Hackstein, G. Ilie, J. Jolie, S. McDaniel, D. Miller, P. Petkov, Th. Pissulla, A. Ratkiewicz, C.A. Ur, P. Voss, K.A. Walsh, D. Weisshaar, K.-O. Zell. *Phys. Rev. Lett.* **106**, 022502 (2011).
5.  **$^{34}\text{P}(^7\text{Li}, ^7\text{Be}+\gamma)$  Reaction at 100 A MeV in Inverse Kinematics**  
R.G.T. Zegers, R. Meharchand, Y. Shimbara, Sam M. Austin, D. Bazin, B.A. Brown, C.Aa. Diget, A. Gade, C.J. Guess, M. Hausmann, G.W. Hitt, M.E. Howard, M. King, D. Miller, S. Noji, A. Signoracci, K. Starosta, C. Tur, C. Vaman, P. Voss, D. Weisshaar, J. Yurkon. *Phys. Rev. Lett* **104**, 212504 (2010).
6. **Digital Data Acquisition System for experiments with segmented detectors at National Superconducting Cyclotron Laboratory**  
K. Starosta, C. Vaman, D. Miller, P. Voss, D. Bazin, T. Glasmacher, H. Crawford, P. Mantica, H. Tan, W. Hennig, M. Walby, A. Fallu-Labruyere, J. Harris, D. Breus, P. Grudberg, W. K. Warburton. *Nucl. Instr. and Meth.* **A610**, 700 (2009).
7. **Intermediate energy proton knockout to the “island of inversion” isotope  $^{31}\text{Mg}$**   
D. Miller, P. Adrich, B.A. Brown, V. Moeller, A. Ratkiewicz, W. Rother, K. Starosta, J.A. Tostevin, C. Vaman, P. Voss, A. Dewald. *Phys. Rev. C* **79**, 054306 (2009).
8. **A Simulation Tool for the Recoil Distance Method Lifetime Measurements at NSCL**  
P. Adrich, D. Enderich, D. Miller, V. Moeller, R.P. Norris, K. Starosta, C. Vaman, P. Voss. *Nucl. Instr. and Meth.* **A598**, 454 (2009).
9. **Evidence for a Doubly Magic  $^{24}\text{O}$**   
C.R. Hoffman, T. Baumann, D. Bazin, J. Brown, G. Christian, D.H. Denby, P.A. DeYoung, J.E. Finck, N. Frank, J. Hinnefeld, S. Mosby, W.A. Peters, W.F. Rogers, A. Schiller, A. Spyrou, M.J. Scott, S.L. Tabor, M. Thoennessen, P. Voss. *Phys. Lett. B* **672**, 17 (2009).
10. **Determination of the  $N=16$  Shell Closure at the Oxygen Drip Line**  
C.R. Hoffman, T. Baumann, D. Bazin, J. Brown, G. Christian, P.A. DeYoung, J.E. Finck, N. Frank, J. Hinnefeld, R. Howes, P. Mears, E. Mosby, S. Mosby, J. Reith, B. Rizzo, W.F. Rogers, G. Peaslee, W.A. Peters, A. Schiller, M.J. Scott, S.L. Tabor, M. Thoennessen, P. Voss, T. Williams. *Phys. Rev. Lett.* **100**, 152502 (2008).
11. **Big Physics at Small Places: The Mongol Horde Model of Undergraduate Research**  
P. Voss, J.E. Finck, R.H. Howes, J. Brown, T. Baumann, A. Schiller, M. Thoennessen, P.A. DeYoung, G.F. Peaslee, J. Hinnefeld, B. Luther, P.V. Pancella, W.F. Rogers. *Journal of College Teaching and Learning* **5**, 37 (2008).
12. **Collectivity of Neutron-Rich Palladium Isotopes and The Valence Proton Symmetry**  
A. Dewald, K. Starosta, P. Petkov, M. Hackstein, W. Rother, P. Adrich, T. Baumann, D. Bazin, M. Bowen, A. Chester, A. Dunomes, A. Gade, D. Galaviz, T. Glasmacher, T. Ginter, M. Hausmann, J. Jolie, B. Melon, D. Miller, V. Moeller, R.P. Norris, T. Pissulla, M. Portillo, Y. Shimbara, A. Stolz, C. Vaman, P. Voss, D. Weisshaar. *Phys. Rev. C* **78**, 051302(R) (2008).
13. **Shape and Structure of  $N=Z$   $^{64}\text{Ge}$ ; Electromagnetic Transition Rates From the Application of the Recoil Distance Method to Knock-Out Reaction**  
K. Starosta, A. Dewald, A. Dunomes, P. Adrich, A.M. Amthor, T. Baumann, D. Bazin, M. Bowen, B.A. Brown, A. Chester, A. Gade, D. Galaviz, T. Glasmacher, T. Ginter, M. Hausmann, M. Horoi,

J. Jolie, B. Melon, D. Miller, V. Moeller, R.P. Norris, T. Pissulla, M. Portillo, W. Rother, Y. Shimbara, A. Stolz, C. Vaman, P. Voss, D. Weisshaar, V. Zelevinsky. *Phys. Rev. Lett.* **99**, 042503 (2007).

## Manuscripts Accepted for Publication

### Excited-state transition-rate measurements in $^{18}\text{C}$

P. Voss, T. Baugher, D. Bazin, R.M. Clark, H.L. Crawford, A. Dewald, P. Fallon, A. Gade, G.F. Grinyer, H. Iwasaki, A.O. Macchiavelli, S. McDaniel, D. Miller, M. Petri, A. Ratkiewicz, W. Rother, K. Starosta, K.A. Walsh, D. Weisshaar, C. Forssén, R. Roth, P. Navrátil. *Phys. Rev. C*, Rapid Communication, (June 21, 2012).

## Manuscripts in Preparation

### $^{19}\text{Mg}$ Two-Proton Decay Lifetime: A New Application of the Recoil Distance Method

P. Voss, T. Baumann, D. Bazin, A. Dewald, H. Iwasaki, D. Miller, A. Ratkiewicz, A. Spyrou, K. Starosta, M. Thoennessen, C. Vaman.

## Conference Proceedings

### 1. TIGRESS Integrated Plunger (TIP) facility at TRIUMF

K. Starosta, C. Andreoiu, R. Ashley, R.A.E. Austin, A. Chester, P.E. Garrett, J. Shoults, C.E. Svensson, P. Voss. Submitted to WSPC, 2011.

### 2. Lifetime Measurement of the $2_1^+$ state in $^{20}\text{C}$

M. Petri, P. Fallon, A.O. Macchiavelli, S. Paschalis, K. Starosta, T. Baugher, D. Bazin, L. Cartegni, R.M. Clark, H.L. Crawford, M. Cromaz, A. Dewald, A. Gade, G.F. Grinyer, S. Gros, M. Hackstein, H.B. Jeppesen, I.Y. Lee, S. McDaniel, D. Miller, M.M. Rajabali, A. Ratkiewicz, W. Rother, P. Voss, K.A. Walsh, D. Weisshaar, M. Wiedeking. *AIP Conf. Proc.* **1377**, 96 (2011).

### 3. Collectivity of Exotic Heavy Fe Isotopes

C. Fransen, W. Rother, H. Iwasaki, A. Dewald, T. Baugher, D. Bazin, B.A. Brown, H.L. Crawford, A. Gade, T.N. Ginter, T. Glasmacher, G.F. Grinyer, M. Hackstein, G. Ilie, J. Jolie, S.M. Lenzi, S. McDaniel, D. Miller, P. Petkov, T. Pissulla, A. Ratkiewicz, K. Starosta, C.A. Ur, P. Voss, K.A. Walsh, D. Weisshaar, K.-O. Zell. *Journal of Physics: Conference Series* **312**, 092025 (2011).

### 4. Neutron-Rich $^{62,64,66}\text{Fe}$ Show Enhanced Collectivity: The Washout of $N = 40$ in Terms of Experiment, Valence Proton Symmetry and Shell Model

W. Rother, A. Dewald, H. Iwasaki, S.M. Lenzi, K. Starosta, D. Bazin, T. Baugher, B.A. Brown, H.L. Crawford, C. Fransen, A. Gade, T.N. Ginter, T. Glasmacher, G.F. Grinyer, M. Hackstein, G. Ilie, J. Jolie, S. McDaniel, D. Miller, P. Petkov, Th. Pissulla, A. Ratkiewicz, C.A. Ur, P. Voss, K.A. Walsh, D. Weisshaar, K.-O. Zell. *AIP Conf. Proc.* **1377**, 104 (2011).

### 5. New developments on the Recoil Distance Doppler-Shift Method

C. Fransen, A. Dewald, T. Baumann, D. Bazin, A. Blazhev, B.A. Brown, A. Chester, A. Gade, T. Glasmacher, P.T. Greenlees, M. Hackstein, S. Harissopulos, U. Jakobsson, J. Jolie, P.M. Jones, R. Julin, S. Juutinen, S. Ketelhut, T. Konstantinopoulos, A. Lagoyannis, M. Leino, P. Nieminen, M. Nyman, P. Petkov, P. Peura, T. Pissulla, P. Rahkila, W. Rother, P. Ruotsalainen, J. Saren, C. Scholey, J. Sorri, K. Starosta, A. Stolz, J. Uusitalo, P. Voss, D. Weisshaar. *Journal of Physics: Conference Series* **205**, 012043 (2010).

### 6. Plunger lifetime measurements after Coulomb excitation at intermediate beam energies

A. Dewald, K. Starosta, P. Petkov, M. Hackstein, W. Rother, P. Adrich, A.M. Amthor, T. Baumann, D. Bazin, M. Bowen, A. Chester, A. Dunomes, A. Gade, D. Galaviz, T. Glasmacher, T. Ginter, M. Hausmann, J. Jolie, B. Melon, D. Miller, V. Moeller, R.P. Norris, T. Pissulla, M. Portillo, Y. Shimbara, A. Stolz, C. Vaman, P. Voss, D. Weisshaar. *AIP Conf. Proc.* **1090**, 135 (2009).

7. **Lifetime Measurements of Excited States in Exotic Nuclei Produced in Reactions at Intermediate Energies**  
K. Starosta, P. Adrich, A. Dewald, D. Miller, V. Moeller, C. Vaman, P. Voss. *Acta Phys. Pol.* **B40** 1001 (2009).
8. **Digital Data Acquisition Modules for Instrumenting Large Segmented Germanium Detector Arrays**  
H. Tan, W. Hennig, M. Walby, A. Fallu-Labruyere, J. Harris, D. Breus, P. Grudberg, W. Warburton, C. Vaman, T. Glasmacher, P. Mantica, D. Miller, K. Starosta, P. Voss. *Nuclear Science Symposium Conf. Record. NSS 2008*, IEEE 3196 (2008).

#### Invited Talks and Seminars

1. **Nuclear Structure Studies with TIGRESS, the TRIUMF ISAC Gamma-Ray Escape-Suppressed Spectrometer**  
Invited Talk. 49<sup>th</sup> Winter Nuclear and Particle Physics Conference. Centre des Conférences, Mont Tremblant, Québec, Canada, February 2012.
2. **Recoil Distance Method Lifetime Measurements Via Gamma-Ray and Charged Particle Spectroscopy at NSCL**  
Seminar. TRIUMF, Vancouver, BC, Canada, July 2010.
3. **Lifetime Measurements Via Gamma-Ray and Charged Particle Spectroscopy with the Köln/NSCL Plunger**  
Invited talk. Central Michigan University, Mount Pleasant, MI, April 2010.

#### Conference Presentations

1. **Electromagnetic Transition Rate Measurements Following Coulomb Excitation With the TIGRESS Integrated Plunger** (Talk)  
Canadian Association of Physicists 2012 Congress. Calgary, AB, Canada, June 2012.
2. **Nuclear Structure Studies with TIGRESS, the TRIUMF ISAC Gamma-Ray Escape-Suppressed Spectrometer** (Talk)  
49<sup>th</sup> Winter Nuclear and Particle Physics Conference. Mont Tremblant, QC, Canada, February 2012.
3. **Two-Proton Decay Lifetime of  $^{19}\text{Mg}$ : A New Application of the Recoil Distance Method** (Talk)  
2011 Fourth International Conference on Proton-emitting Nuclei, Bordeaux, France, June 2011.
4. **Recoil Distance Method Lifetime Investigation of the First  $2^+$  State in  $^{18}\text{C}$**  (Poster)  
2010 International Nuclear Physics Conference, Vancouver, BC, Canada, July 2010.
5. **Recoil Distance Method Lifetime Measurement Of the First  $2^+$  State in  $^{18}\text{C}$**  (Talk)  
2009 Joint Meeting of The Division of Nuclear Physics of the APS and JPS, Waikoloa, HI, October 2009.
6. **Lifetime Investigation of the First  $2^+$  State in  $^{18}\text{C}$  with The Köln/NSCL Plunger** (Poster)  
2009 Nuclear Chemistry Gordon Research Conference, Colby-Sawyer College, New London, NH, June 2009.
7. **Probing Exotic, Particle-Decay Isotopes: A New Application of the Recoil Distance Method** (Poster)  
2009 8<sup>th</sup> International Conference on Radioactive Nuclear Beams, Grand Rapids, MI, May 2009.
8. **Probing Exotic, Particle-Decay Isotopes: A New Application of the Recoil Distance Method** (Talk)  
2008 Fall Meeting of The Division of Nuclear Physics of the APS, Oakland, CA, October 2008.

9. **Probing Exotic, Particle-Decay Isotopes: A New Application of the Recoil Distance Method** (Poster)  
2008 Nuclear Structure Conference, East Lansing, MI, June 2008.
10. **Fragmentation Studies of Heavy  $N \simeq Z$  Nuclei: The Structure of  $^{63}\text{Ga}$**  (Poster)  
2007 Nuclear Chemistry Gordon Research Conference, Colby-Sawyer College, New London, NH, June 2007.

#### **Professional Workshops and Conferences**

**Canadian Association of Physicists 2012 Congress.** Calgary, AB, Canada, June 2012.

**49<sup>th</sup> Winter Nuclear and Particle Physics Conference.** Mont Tremblant, QC, Canada, February 2012.

**GRIFIN Collaboration Meeting.** Vancouver, BC, Canada, May 2012.

**GRIFIN Collaboration Meeting.** Vancouver, BC, Canada, August 2011.

**2011 TRIUMF Users Group Annual Meeting.** Vancouver, BC, Canada, July 2011.

**2011 Coulex Summer School.** Vancouver, BC, Canada, June 2011.

**Fourth International Conference on Proton-emitting Nuclei.** Bordeaux, France, June 2011.

**Fourth TIGRESS Science Workshop.** Vancouver, BC, Canada, July 2010.

**2010 International Nuclear Physics Conference.** Vancouver, BC, Canada, July 2010.

**FRIB Equipment Workshop.** East Lansing, MI, February 2010.

**2009 Joint Meeting of the DNP and JPS.** Waikoloa, HI, October 2009.

**2009 NSCL User and FRIB Collaboration Meetings.** East Lansing, MI, August 2009.

**2009 Nuclear Chemistry Gordon Research Conference.** New London, NH, June 2009.

**2009 8<sup>th</sup> International Conf. on Radioactive Nuclear Beams.** Grand Rapids, MI, May 2009.

**2008 Division of Nuclear Physics Fall Meeting of the APS.** Oakland, CA, October 2008.

**Seventh Summer School on Exotic Beam Physics at ANL.** Lemont, IL, August 2008.

**2008 Nuclear Structure Conference.** East Lansing, MI, June 2008.

**2008 NSCL User Workshop.** East Lansing, MI, June 2008.

**2007 NSCL User Workshop.** East Lansing, MI, August 2007.

**2007 Nuclear Chemistry Gordon Research Conference.** New London, NH, June 2007.

**2006 NSCL User Workshop.** East Lansing, MI, June 2006.

**American Physical Society April Meeting.** Dallas, TX, April 2006.

1. P. Voss, T. Baugher, D. Bazin, R.M. Clark, H.L. Crawford, A. Dewald, P. Fallon, A. Gade, G.F. Grinyer, H. Iwasaki, A.O. Macchiavelli, S. McDaniel, D. Miller, M. Petri, A. Ratkiewicz, W. Rother, K. Starosta, K.A. Walsh, D. Weisshaar, C. Forssén, R. Roth, P. Navrátil, *Excited-state transition-rate measurements in  $^{18}\text{C}$* , Accepted for publication as Phys. Rev. C, Rapid Communication (2012).
2. A. Lemasson, H. Iwasaki, C. Morse, D. Bazin, T. Baugher, J.S. Berryman, A. Dewald, C. Fransen, A. Gade, S. McDaniel, A. Nichols, A. Ratkiewicz, S. Stroberg, P. Voss, R. Wadsworth, D. Weisshaar, K. Wimmer, R. Winkler, *Observation of mutually enhanced collectivity in self-conjugate  $^{76}_{38}\text{Sr}_{38}$* , Phys. Rev. C 85, 041303(R) (2012).
3. R. Meharchand, R.G.T. Zegers, B.A. Brown, S.M. Austin, T. Baugher, D. Bazin, J. Deaven, A. Gade, G.F. Grinyer, C.J. Guess, M.E. Howard, H. Iwasaki, S. McDaniel, K. Meierbachtol, G. Perdikakis, J. Pereira, A.M. Prinke, A. Ratkiewicz, A. Signoracci, S. Stroberg, L. Valdez, P. Voss, K.A. Walsh, D. Weisshaar, R. Winkler, *Probing Configuration Mixing in  $^{12}\text{Be}$  with Gamow-Teller Transition Strengths*, Phys. Rev. Lett. 108, 122501 (2012).
4. M. Petri, P. Fallon, A.O. Macchiavelli, S. Paschalis, K. Starosta, T. Baugher, D. Bazin, L. Cartegni, R.M. Clark, H.L. Crawford, M. Cromaz, A. Dewald, A. Gade, G.F. Grinyer, S. Gros, M. Hackstein, H.B. Jeppesen, I.Y. Lee, S. McDaniel, D. Miller, M.M. Rajabali, A. Ratkiewicz, W. Rother, P. Voss, K.A. Walsh, D. Weisshaar, M. Wiedeking, B.A. Brown, *Lifetime Measurement of the  $2^+_1$  State in  $^{20}\text{C}$* , Phys. Rev. Lett 107, 102501 (2011).
5. W. Rother, A. Dewald, H. Iwasaki, S.M. Lenzi, K. Starosta, D. Bazin, T. Baugher, B.A. Brown, H.L. Crawford, C. Fransen, A. Gade, T.N. Ginter, T. Glasmacher, G.F. Grinyer, M. Hackstein, G. Ilie, J. Jolie, S. McDaniel, D. Miller, P. Petkov, Th. Pissulla, A. Ratkiewicz, C.A. Ur, P. Voss, K.A. Walsh, D. Weisshaar, K.-O. Zell, *Enhanced Quadrupole Collectivity at  $N = 40$ : The Case of Neutron-Rich Fe Isotopes*, Phys. Rev. Lett. 106, 022502 (2011).
6. R.G.T. Zegers, R. Meharchand, Y. Shimbara, Sam M. Austin, D. Bazin, B.A. Brown, C.Aa. Diget, A. Gade, C.J. Guess, M. Hausmann, G.W. Hitt, M.E. Howard, M. King, D. Miller, S. Noji, A. Signoracci, K. Starosta, C. Tur, C. Vaman, P. Voss, D. Weisshaar, J. Yurkon,  $^{34}\text{P}(^7\text{Li}, ^7\text{Be}+\gamma)$  Reaction at 100 A MeV in Inverse Kinematics, Phys. Rev. Lett. 104, 212504 (2010).
7. K. Starosta, C. Vaman, D. Miller, P. Voss, D. Bazin, T. Glasmacher, H. Crawford, P. Mantica, H. Tan, W. Hennig, M. Walby, A. Fallu-Labruyere, J. Harris, D. Breus, P. Grudberg, W. K. Warburton, *Digital Data Acquisition System for experiments with segmented detectors at National Superconducting Cyclotron Laboratory*, Nucl. Instr. and Meth. A610, 700 (2009).
8. D. Miller, P. Adrich, B.A. Brown, V. Moeller, A. Ratkiewicz, W. Rother, K. Starosta, J.A. Tostevin, C. Vaman, P. Voss, A. Dewald, *Intermediate energy proton knockout to the “island of inversion” isotope  $^{31}\text{Mg}$* , Phys. Rev. C 79, 054306 (2009).
9. P. Adrich, D. Enderich, D. Miller, V. Moeller, R.P. Norris, K. Starosta, C. Vaman, P. Voss, A *Simulation Tool for the Recoil Distance Method Lifetime Measurements at NSCL*, Nucl. Instr. and Meth. A598, 454 (2009).
10. C.R. Hoffman, T. Baumann, D. Bazin, J. Brown, G. Christian, D.H. Denby, P.A. DeYoung, J.E. Finck, N. Frank, J. Hinnefeld, S. Mosby, W.A. Peters, W.F. Rogers, A. Schiller, A. Spyrou, M.J. Scott, S.L. Tabor, M. Thoennessen, P. Voss, *Evidence for a Doubly Magic  $^{24}\text{O}$* , Phys. Lett. B 672, 17 (2009).
11. C.R. Hoffman, T. Baumann, D. Bazin, J. Brown, G. Christian, P.A. DeYoung, J.E. Finck, N. Frank, J. Hinnefeld, R. Howes, P. Mears, E. Mosby, S. Mosby, J. Reith, B. Rizzo, W.F. Rogers, G. Peaslee, W.A. Peters, A. Schiller, M.J. Scott, S.L. Tabor, M. Thoennessen, P. Voss, T. Williams, *Determination of the  $N=16$  Shell Closure at the Oxygen Drip Line*, Phys. Rev. Lett. 100, 152502 (2008).

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13. A. Dewald, K. Starosta, P. Petkov, M. Hackstein, W. Rother, P. Adrich, T. Baumann, D. Bazin, M. Bowen, A. Chester, A. Dunomes, A. Gade, D. Galaviz, T. Glasmacher, T. Ginter, M. Hausmann, J. Jolie, B. Melon, D. Miller, V. Moeller, R.P. Norris, T. Pissulla, M. Portillo, Y. Shimbara, A. Stolz, C. Vaman, P. Voss, D. Weisshaar, *Collectivity of Neutron-Rich Palladium Isotopes and The Valence Proton Symmetry*, Phys. Rev. C 78, 051302(R) (2008).
14. K. Starosta, A. Dewald, A. Dunomes, P. Adrich, A.M. Amthor, T. Baumann, D. Bazin, M. Bowen, B.A. Brown, A. Chester, A. Gade, D. Galaviz, T. Glasmacher, T. Ginter, M. Hausmann, M. Horoi, J. Jolie, B. Melon, D. Miller, V. Moeller, R.P. Norris, T. Pissulla, M. Portillo, W. Rother, Y. Shimbara, A. Stolz, C. Vaman, P. Voss, D. Weisshaar, V. Zelevinsky, *Shape and Structure of  $N=Z$   $^{64}\text{Ge}$ ; Electromagnetic Transition Rates From the Application of the Recoil Distance Method to Knock-Out Reaction*, Phys. Rev. Lett. 99, 042503 (2007).



Canadian Institute of Nuclear Physics  
Institut canadien de physique nucléaire

**Individual Membership Application Form**

Please return completed form to CINP Membership Director –  
Send either by surface-mail, or by scanning this signed form and emailing a PDF file:  
Garth Huber (huberg@uregina.ca), Dept. of Physics, University of Regina  
Regina, SK S4S 0A2 Canada

I, Ismail Zakout hereby apply for individual membership in the Canadian Institute of Nuclear Physics, and if granted, I agree to abide by the by-laws of the said Institute. I enclose herewith a completed personal data form.

Full Name:	Ismail ZAKOUT		
Current position:	Physicist		
Date that current position expires:			
Institutional Affiliation*:	Frankfurt University, Germany		
Full Postal Address: current:	506-390 Southdale R. E.		
	London, Ontario, N6E 1V9		
	tel: 519 204 3079		
E-mail Address:	zakout@th.physik.uni-frankfurt.de		
Web Address:			
Membership (select one):	FACULTY	ASSOCIATE	<input checked="" type="checkbox"/>

\* Adjunct faculty must choose a single institution with which to register their affiliation.

**Declaration of Availability for Participation**

I declare that 65 % (not less than 50%) of my normal research time will be spent on activities which are compatible with the physics interests of the Canadian Institute of Nuclear Physics.

Signed:	
Signature of Immediate Supervisor (if applicable):	
Date:	30 August 2012



Please complete the personal data form below:  
**Personal Data Form**

**1. Positions held in the past 10 years**

Position	Dates (MM/YYYY)	Department and Institution
Research fellow	2004	Frankfurt University,
Research fellow	2006	Harvard University,
Research fellow	2010	Frankfurt University,

Germany  
USA  
Germany

**2. Qualifications**

Degree of Diploma	Year	Granting Institution	Field of Specialization
B.Sc.	1989	BZU, West Bank	Israel Physics
M.Sc.	1992	METU, Turkey	Physics
Ph.D.	1996	METU, Turkey	Physics

Are you currently eligible to hold an NSERC research grant (according to NSERC's stated eligibility criteria)?

Yes ☐ No ☐

**3. Brief Outline (not more than 200 words) of your current research interests:**

My prime interest is the search for  
 Quark-gluon-Plasma and to study the shape  
 and order of the deconfinement phase transition.  
 The bound states near the deconfinement line also  
 attract my attention.  
 The search for new physics associates the  
 deconfinement is also crucial in my research.

**4. My interest is primarily in:**

Theory ☒ Experiment ☐

5. Please consider my membership in the following Scientific Working Groups:

Nuclear Structure	
Nuclear Astrophysics	
Searches for New Physics	✓
Hadron Structure/QCD	✓
Nuclear Physics Education and Training	

6. Publications and Patents

Total number of papers published in refereed journals: >20

*I intend to resume my research activity in the near future*

On a separate sheet, list in chronological order:

- Titles of papers published, in press, and/or accepted for publication in refereed journals, for the past 5 years only.
- List of Patents obtained

# Curriculum Vitae

## Ismail Zakout

**Email:** zakout\_is@yahoo.ca

**Present address:** apartment 506,

390 Southdale Road East, London Ontario N6E 1V8

**tel:** 519 204 3079

*status: Canadian citizen*

### Work

Career: Nuclear Physics, Theoretical Nuclear Physics,  
New physics at LHC (Large hadron collider)

### Education

1. B.Sc. in Physics, (1990) Birzeit University, Birzeit, Palestinian Territories. (*Via Israel*)
2. M.Sc. in Physics, (1992) METU, Ankara, Turkey.
3. Ph.D. in Physics, (1996) METU, Ankara, Turkey.
4. Several Post Doctoral studies in Europe and USA

### Academic experience

1. (Undergrad-1990) Birzeit University, West Bank, Palestine: Physics department scholarship. *Via Israel*
2. (1990-1996) Middle East Technical University, Ankara, Turkey: Teaching and research assistant and research associate.
3. (1998-): Department of Physics, Bethlehem University, P. O. Box 9, Bethlehem, Palestinian Territories, Lecturer and Principal investigator.  
Trilateral scientific collaboration among Bethlehem university, Tel-Aviv University, and Frankfurt University sponsored by Germany Research Society (DFG).
4. (1998-): Institute for theoretical physics, J. W. Goethe University, Frankfurt am Main, Germany.
5. (2002-2003): Institute for theoretical physics, Stanford University, California, USA,

6. (2003-2004) Palestine Academy for Science and Technology, based in the Palestinian Red Crescent Head Quarter in Gaza city.
7. (2004-2005) Frankfurt Institute for Advanced Studies and Institute for theoretical physics, J. W. Goethe-Frankfurt University, Frankfurt am Main, Germany. Alexander von Humboldt Post Doctoral Research Fellow. (Remark: AvH foundation is founded and sponsored by the federal government of Germany)
8. (2005-2006) Harvard Physics Department, Harvard University, Cambridge, MA 02318, USA, visiting professor.
9. (2010-2011) Institute for theoretical physics, J. W. Goethe University, Frankfurt am Main, Germany, visiting professor.