

**Agenda**  
**for the Nuclear Physics Workshop**  
**at the NITheP, Stellenbosch, South Africa**  
**May 16-27, 2011**

Day 1: Monday, May 16, 2011: Morning Session:

8:30-9:30 Registration

9:30-9:45 Frederik Scholtz (Director: NITheP): Welcome and Overview of the NITheP and the Workshop

9:45-10:30 Bruce Barrett (U Arizona): Overview of the Basic Properties of Atomic Nuclei (35 min + 10 min discussion)

10:30-11:00 Coffee Break

11:00-11:45 Bruce Barrett: Overview of the Basic Properties of Atomic Nuclei (continued) (35 + 10)

11:45-12:45 Witold Nazarewicz: (U Tennessee): Introduction to Nuclear Structure Theory (50 + 10)

13:00-14:00 Lunch at the conference site

14:00-15:30 Start Afternoon Hands-on Session: Bruce, Witek, Rick Casten, Meredith Howard. Discussions between lecturers and students. Organization of the program. Information about the Wiki and the Hands-on Sessions

15:30-16:00 Coffee Break

16:00-17:25 Continue Afternoon Hands-on Session: Nuclear Theory: Bruce, Witek, Leslie Schradin, etc.

17:25 End of Afternoon Session

Dinner arrangements made individually

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Day 2: Tuesday, May 17, 2011: Morning Session:

9:30-10:30 Rick Casten (Yale U): Introduction to Nuclear Experimental Physics (50 + 10)

10:30-11:00 Coffee Break

11:00-12:00 Meredith Howard (Rutgers U): Laying the Ground Work for Running Nuclear Physics Experiments – A Step-by-Step Guide and Checklist (50 + 10)

12:00-13:00 Rick Casten, Meredith Howard, and other experimentalists: Other experimental nuclear physics topics (50 + 10)

13:00-14:00 Lunch at the conference site

14:00-15:30 Start Afternoon Hands-on Session: Experimental Nuclear Physics: Rick Casten, Meredith Howard, Haik Simon, Sherry Yennello, etc.

15:30-16:00 Coffee Break

16:00-17:25 Continue Afternoon Hands-on Session: Experimental Nuclear Physics: Rick Casten, Meredith Howard, Haik Simon, Sherry Yennello, etc.

17:25 End of Afternoon Session

Dinner arrangements made individually

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Day 3: Wednesday, May 18, 2011: Morning Session:

9:30-10:30 Hans Feldmeier (GSI): Introduction to Many-Body Quantum Systems (50 + 10)

10:30-11:00 Coffee Break

11:00-12:00 Thomas Papenbrock (U Tennessee) (50 + 10): Effective Theory for Deformed Nuclei

12:00-13:00 Jacek Dobaczewski (U Warsaw): Why, How and What for the Energy Density Functionals in Nuclei (50 + 10)

13:00-14:00 Lunch at the conference site

14:00-15:30 Start Afternoon Hands-on Session: Theoretical Nuclear Physics: Hans Feldmeier, etc.

15:30-16:00 Coffee Break

16:00-17:25 Continue Afternoon Hands-on Session: Experimental Nuclear Physics: Rick Casten,

Meredith Howard, Haik Simon, Sherry Yennello, etc.

17:25 End of Afternoon Session

Dinner arrangements made individually

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Day 4: Thursday, May 19, 2011: Morning Session:

9:30-10:30 Carlos Bertulani (Texas A&M U-Commerce): Introduction to Reaction Theory with an emphasis on Rare Nuclear Isotopes (50 + 10)

10:30-11:00 Coffee Break

11:00-12:00 Haik Simon (GSI): Crossing Bounds: From Exotic Nuclear Systems to FAIR (50 + 10)

12:00-13:00 Jacobus Lawrie (Deputy Director: iThemba LABS) (50 + 10): Overview of the iThemba LABS: Equipment, Research, Applications and Possibilities for International Collaborations

13:00-14:00 Lunch at the conference site

14:00 Buses departure for the iThemba LABS

14:30-17:30 Tour of the iThemba LABS with discussions regarding the research apparatus and experiments

17:30-18:00 Reception at iThemba LABS

18:00-19:30 Southern African braai (BBQ) at iThemba LABS

19:30 Buses take participants back to Stellenbosch

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Day 5: Friday, May 20, 2011: Morning Session:

9:30-10:30 Sherry Yennello (Texas A&M U) (50 + 10): Introduction to High Energy Nuclear Reactions: How to Boil a Nucleus and What Do We Learn from It?

10:30-11:00 Coffee Break

11:00-11:50 Elena Litvinova (GSI): Extensions of the Covariant Density Functional Theory and Collective Phenomena in Nuclei (40 + 10)

11:50-12:50 Hendrik Geyer (STIAS): Overview of STIAS and the Possibilities for International collaborations (50 + 10)

13:00-14:00 Lunch at the conference site

14:00-15:30 Start Afternoon Hands-on Session: Experimental Nuclear Physics: Rick Casten, Meredith Howard, Haik Simon, Sherry Yennello, etc.

15:30-16:00 Coffee Break

16:00-17:25 Continue Afternoon Hands-on Session: Theoretical Nuclear Physics: Thomas Papenbrock, etc.

17:25 End of Afternoon Session

Dinner arrangements made individually

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Day 6: Saturday, May 21: Free time to organize your own activities, e.g., excursion to Cape Town.

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Day 7: Sunday, May 22: Free time to organize your own activities, e.g., excursion to Cape of Good Hope

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Day 8: Monday, May 23, 2011: Morning Session:

9:30-10:30 Steven Pain (ORNL) (50 + 10): Where Did We Come From? – An Introduction to Nuclear Astrophysics

10:30-11:00 Coffee Break

11:00-12:00 Jochen Wambach (TU Darmstadt) (50 + 10): Introduction to Compact Stars: Part 1

12:00-13:00 Robert Roth (TU Darmstadt) (50 + 10): Introduction to Ab Initio Nuclear Structure Theory: Part 1

13:00-14:00 Lunch at the conference site

14:00-15:30 Start Afternoon Hands-on Session: Experimental Nuclear Physics: Steven Pain, Meredith Howard, Heather Crawford, etc.

15:30-16:00 Coffee Break

16:00-17:25 Continue Afternoon Hands-on Session: Theoretical Nuclear Physics  
Carlos Bertulani, etc.

17:25 End of Afternoon Session

Dinner arrangements made individually

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Day 9: Tuesday, May 24, 2011: Morning Session:

9:30-10:30 Jochen Wambach (TU Darmstadt) (50 + 10): Introduction to Compact Stars: Part 2

10:30-11:00 Coffee Break

11:00-12:00 Robert Roth (TU Darmstadt) (50 + 10): Introduction to Ab Initio Nuclear Structure Theory: Part 2

12:00-12:55 Eric Anderson (Ohio State U) (45 + 10): Nuclear Observables at Low Resolution

13:00-14:00 Lunch at the conference site

14:00-15:30 Start Afternoon Hands-on Session: Theoretical Nuclear Physics: Robert Roth, etc.

15:30-16:00 Coffee Break

16:00-17:25 Continue Afternoon Hands-on Session: Experimental Nuclear Physics  
Steven Pain, Meredith Howard, Heather Crawford, etc.

17:25 End of Afternoon Session

Dinner arrangements made individually

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Day 10: Wednesday, May 25, 2011: Morning Session:

9:30-10:30 Bira van Kolck (U Arizona) (50 + 10): Shallow Nuclei in Effective Field Theory

10:30-11:00 Coffee Break

11:00-12:00 Jimmy Rotureau (U Arizona) (50 + 10): Effective Field Theory (EFT) for the Nuclear Shell Model

12:00-12:55 Regina de Azevedo (U Arizona) (45 + 10): Mixed One-Pion Exchange and the Auxiliary Field Potential

13:00-14:00 Lunch at the conference site

14:00-15:30 Start Afternoon Hands-on Session: Experimental Nuclear Physics: Meredith Howard, Steve Pain, Heather Crawford, etc.

15:30-16:00 Coffee Break

16:00-17:25 Continue Afternoon Hands-on Session: Theoretical Nuclear Physics  
Bira van Kolck, etc.

17:25 End of Afternoon Session

Dinner arrangements made individually

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Day 11: Thursday, May 26, 2011: Morning Session:

9:30-10:30 Tomas Rodriguez (GSI) (50 + 10): Beyond Mean-field for Spectroscopy of Exotic Nuclei

10:30-11:00 Coffee Break

11:00-12:00 Heather Crawford (LBL) (50 + 10): Introduction to Exotic Nuclei: Importance and Experimental Detection

11:00-12:55 Angelo Calci (TU Darmstadt) (45 + 10): Nuclear Structure with Chiral NN+3N Interactions

13:00-14:00 Lunch at the conference site

14:00-15:30 Start Afternoon Hands-on Session: Experimental Nuclear Physics  
Heather Crawford, Meredith Howard, Steven Pain, etc.

15:30-16:00 Coffee Break

16:00-17:25 Continue Afternoon Hands-on Session: Theoretical Nuclear Physics: Tutorial by  
Leslie Schradin on Computational Nuclear Physics

17:25 End of Afternoon Session

18:45 Depart for the Lanzerac Hotel, site of the Workshop Banquet

19:30: Start of the Workshop Reception and Banquet: Lanzerac Hotel  
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Day 12: Friday, May 27, 2011: Morning Session:

9:30-10:30 Ionel Stetcu (U Washington) (50 + 10): Applications of the Time-dependent Superfluid Local-density Approximation to Fermionic Systems

10:30-11:00 Coffee Break

11:00-12:00 Anna Hayes (LANL) (50 + 10): Applications of Nuclear Physics

12:00-13:00 Dr Van Zyl de Villiers (Necsa Group Executive: Strategy and Performance): Nuclear Energy in South Africa (50 + 10)

13:00-14:00 Lunch at the conference site

14:00-17:00 Start Afternoon Session (including a coffee break from 15:30-16:00): Open Discussion between speakers and students. Discussion of planned future and continuing collaborations as well as possibilities for post-doctoral research positions in nuclear physics in the USA, Europe, etc. Overall summary of the Workshop by Bruce Barrett and the ending of the workshop.

17:00 End of Workshop

Dinner arrangements made individually

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Prepared by Bruce R. Barrett on May 9, 2011, in Seattle, WA.