Jefferson Lab and the Physics Community Mourn the Death of Kees de Jager, Eminent Nuclear Physicist and Hall A Leader

Cornelius W. de Jager (Kees to all of us), an eminent nuclear physicist who was the leader of Hall A at Jefferson Lab for almost all of the research carried out there to date, passed away on October 24, 2016, in Amsterdam. He was diagnosed very recently with an advanced metastatic cancer, and came down with a deadly infection as he was undergoing chemotherapy.

Kees was born in Newcastle-upon-Tyne, Great Britain in 1943. He was educated in the Netherlands, earning a B.S., M.S., and Ph.D. from the University of Amsterdam. His Ph.D. thesis on "Nuclear Charge Distribution Parameters of ^{206,207,208}Pb", carried out at the 85 MeV EVA accelerator at IKO in Amsterdam (the precursor to NIKHEF), launched him on a career of investigating atomic nuclei using electron scattering.

Kees had a long and distinguished career at NIKHEF. For the decade of the 1980's, he was leader of the "single-arm" electron scattering group, which carried out an elegant series of elastic scattering experiments that provided key information on nuclear charge densities, and which represents the state-of-the-art to this day. Then, for the decade of the 1990's, he was the leader of the internal target physics group that utilized the unique and all-too-quickly closed stretcher ring developed at NIKHEF to begin to exploit the power of coincidence electron scattering. While at NIKHEF, Kees encouraged and developed international collaboration with institutions ranging from the United States to Siberia. He also served as thesis advisor for 16 graduate and 21 undergraduate students.

The closing of the NIKHEF facility was sad for science, but a stroke of good luck for Jefferson Lab, as it meant that in 1996, when we began looking for a Hall Leader for Hall A, Kees was not tied down by a long term commitment to a major program. In 1997, he joined us and led Hall A for essentially all of its operation in the pre-12 GeV era.

Kees' accomplishments at Jefferson Lab were simply stunning. Hall A flourished under his leadership. To begin, the two spectrometers he inherited from Jean Mougey were commissioned, understood, and turned into workhorses of the program. Kees' insights from the NIKHEF internal target program led to the realization that ancillary detector systems "on the floor" could function well in a continuous wave accelerator environment, even in large background conditions. This shaped the future of the field.

The Hall A collaboration itself evolved into a vibrant, involved set of overlapping physics groups that explored everything from nucleon-nucleon correlations to the weak neutral current form factors of the nucleon to the origins of dark matter. A beautiful and elegant set of experiments revealed the high-momentum components of the nuclear wave function and addressed key issues in nucleon-nucleon correlations – a goal of our science from the early days of modern electron scattering. Hypernuclear experiments revealed new aspects of nuclear structure. Few body form factors were mapped out with stunning precision out to cross sections associated with neutrino scattering, providing essential tests for nuclear theory. The physics of spin was advanced dramatically in Hall A, starting with the revealing polarization transfer measurements on the proton and evolving to areas such as the sum rule measurements of the spin structure functions and, most recently, to a parity violation measurement of the neutron radius of lead.

Both the international user community (and particularly the young scientists involved) and the "in house" group flourished under Kees' leadership. The scientific and technical staff evolved into an efficient, dedicated "can-do" team behind all of the Hall A physics. Last, but by no means least, a firm foundation of

outstanding science has been laid for the 12 GeV era (and Kees' help in getting the Upgrade was pivotal).

Kees officially retired from Jefferson Lab in April 2012, but maintained an active interest, both in the physics program here and the related program at MAMI, where he continued as a senior advisor and a member of their program advisory committee.

Kees will be remembered most for the passion with which he pursued this physics and the warm, personal touch he brought to the oversight of the Hall A program. Kees very well understood, and always acknowledged, the important job the technical groups provided to make the Hall A science program run as efficiently as possible. He was particularly supportive of young scientists as they "learned the ropes" in experimental physics, and he worked hard to make the laboratory an exciting, supportive, inviting place for all. He was also as thoughtful and expert in the choice of good wines as he was in the choice of the best experiments to run.

Kees' funeral will take place this coming Monday with a gathering of friends and colleagues at a graveyard on the river Amstel. Kees leaves behind his wife, Valentine, and son, Stephen. Kees also leaves behind a large group of befriended science colleagues, many at Jefferson Lab, his nuclear science family. Condolences may be sent to the family c/o his wife:

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Regards,

Larry Cardman and Rolf Ent
Jefferson Lab