Title: To Lee, with best wishes

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Collection/Series: Lee's Fest: Quantum Gravity and the Nature of Time

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Abstract:

I will make a few remarks of both scientific and personal nature to celebrate Lee's contributions to our field.

To Lee: With Best Wishes

Not the Schrodinger's Cat !

It is Lee's cat!
Not only can it be in a superposed state, but knows how to live in a timeless, space-time foam in a superposed state!!

The 1986 Santa Barbara ITP 6-month Program: Rapproachment of Approaches to Quantum Gravity

- Formulation of GR in terms of connection variables was very recent. Research in GR circles were not familiar with lattice gauge theories. But Lee was, and he also knew the then recent recent developments. He immediately saw that, thanks to the shift of emphasis from metrics to connections, holonomies would provide a powerful toctiool also in canonical gravity. We all know how important this fresh perspective has been for the later developments in LQG.

- Joint work of Ted Jacobson and Lee led to formal solutions to quantum constraints. Inspired, more systematic level on the geometry on the infinite dimensional space of connections that is ongoing.

- AA, TJ, LS used the connection variables to find the general solution of (anti-) self-dual Einstein equations & brought out the unforeseen role played by the group of volume preserving diffeos in that theory. (A new characterization of half flat solutions to Einstein's equations (CMP, 11, 631).

- End of the Program Comnference : Lee gave the overview talk on the then status of QG.

Syracuse and Penn State (1988 – 2001)

Collaborations

- AA, V. Husain, C. Rovelli, J. Samuel, and L. Smolin, (2+1) Quantum Gravity as a Toy model for the (3+1) theory, Classical and Quantum Gravity, 6, L185-L193 (1989).
- AA, C. Rovelli, and L. Smolin, Gravitons and Loops, Physical Review D44, 1740-1755, (1991).
- AA, C. Rovelli, and L. Smolin, Self Duality and Quantization, Journal of Geometry and Physics 8, 7-27 (1992).
- AA, C. Rovelli and L. Smolin, Weaving a Classical Geometry With Quantum Threads, Physical Review Letters, 69, 237-240 (1992).

Community Building

(WORKSHOP, BANACH CENTER, WARSAW, 1997)

Creating the LQG Community

Lee had already started a QG community at Yale with students like Viqar. While at Syracuse and Penn State, in addition to his own research, Lee played a seminal role in creating a vibrant LQG Community. The number of students, postdocs and long-term visitors grew steadily. Thanks to formal seminars and weekly lunch meetings new ideas were constantly discussed. There was a truly bubbling atmosphere.

Many of those that are now senior leaders in LQG wrote their first quantum gravity papers at Syracuse/Penn State during Lee's tenure there. Many including Madhavan and Seth (who will speak this morning), as well as Fernando Barbero, Glenn Barnich, Bernd Brügmann, Aljandro Corichi, Laurent Freidel, Rodolfo Gambini, Guillermo Mena, Jerzy Lewandoski, Jorma Louko, Don Marolf, Jose Mourao, Jorge Pullin, Michel Reisenberger, Hanno Sahlmann, Thomas Thiemann, José Zapata, …… fondly remember that period as a highlight of their research career in terms of stimulating intellectual atmosphere.

And of-course as a founding member of Perimeter Institute, this role has continued over the past quarter century.

Thank you, Lee: for so many contributions to our field!!