Princeton Memes
(or, rather, meme-vectors)

R.L. Dewar

Centre for Plasmas & Fluids
Research School of Physics & Engineering,
The Australian National University (ANU)

Currently visiting PPPL
Memes

Richard Dawkins in *The Selfish Gene & The Blind Watchmaker:*

… new replicators are not DNA … patterns of information that can thrive only in brains … or books, computers and so on … called *memes* to distinguish them from genes … passed from brain to brain … As they propagate they can change — mutate … memic evolution … (see Wikipedia for much much more)

Or maybe they’re like viruses or microbes transmitted by *people* — *meme-vectors*?
My meme tracing attempts

  - KaufmanFest (Allan at 80 as meme-vector between Rosenbluth and Newcomb in the ’60s)

  - DewarFest (RLD at 65 trying to trace evolution of ideas on separation of smooth from fluctuating motion)

*Published version has “memes” removed!*
Possible memetic influences

• Pre Princeton days
• Grad Student days
• Postdoc days
• Research staff days
• Visits
• The future
MSc Melbourne ’65-’67,

- Geoff Opat (Penn): QED... Nöther’s Thm etc
- Ken Hines (ORNL): MSc advisor... EM, relativity, test particles
- Plasma group students: Norm Frankel (ex Atlantic City & MIT) ... stat mech, US unis; Jeff Marsh *’69?; Andrew Prentice ... Landau damping; Graeme Lister ...
- ANU summer school ’67: Freeman Dyson (IAS)... quantum chaos meme
- Senator Fulbright ... Bilateral exchange ➔ airfare to US
PPPL Grad Student Days ’67-’70

• Lyman Spitzer Jr: Director PPL & Chair, Astrophysical Sciences Dept ... PPPL students had office in Peyton Hall

• Tom Stix: Director PPPL grad prog

• Ed Meservey: C Stellarator exptl project

• Russell Kulsrud: PhD Advisor ... MHD, cosmic rays, Petschek reconnection, adabaticity etc etc!

• Lecturers: Martin Kruskal, Carl Oberman, John Dawson, Ed Frieman, Predhiman Kaw
PPPL Grad Student Days contd.

• Class Mates: Ernie Valeo, Eric Jamin, Barry Newberger, Joe Orens, Carl Spight, Rick Ellis, Dan Jassby, Horst Pacher ...

• Older students: Ron Davidson ... Wave-wave coupling, André Rogister ... Weak turbulence theory, Bill Kruer ... Laser plasma simulations

• Younger students: ... Claire Max, Glen Bateman...

• GC students: Richard Madden ... Statistics; Bill Unruh ... General relativity; Jay Atlas ... Philosophy
PPPL Postdoc Days ’71-’74

• Bill Kruer, Ernie Valeo … adiabatic trapping papers
• Ron Cohen … solar wind
• Ray Grimm, Manickam, Jay Boris … computational physics
• John Johnson, John Greene … MHD
• David Potter’s paper in same volume as PEST-I writeup … his MHD waterbag model infected me with the MRxMHD meme?
PPPL Staff Days ’77–’82

• John Greene, Roscoe White, Phil Morrison, Charles Karney, Robert Mackay ’’82 … nonlinear Hamiltonian dynamics

• Carl Oberman, John Krommes … turbulence

• My Princeton students: Amitava Bhattacharjee ’’80… Generalized Taylor relaxation; Eliezer Rosengaus ’’82… High-order Lie perturbation theory

• MHD collabs: Ray Grimm; John Johnson; Paul Rutherford; Don M & Manickam (L’ville Carpool!); Alan Glasser; Steve Jardin
PPPL post-return to Oz ’83-…

• Multiple visits over the years
• My ANU students: Alex Pletzer; Stuart Hudson (ARC Grant Partner Investigator)
• Fulbright Alumni Initiative Grant (FAIG)?
  – Supports Fulbright Alumni and their original home or host institutions to develop innovative projects that will foster institutional linkages and sustainable, mutually beneficial relationships
  – The projected visit must last from 2 to 6 weeks
  – A number of grants of AUD$5,000 are awarded each year depending on budget.
Conclusion

• My Princeton grad student experience has had a lasting impact on my life & career
• Apologies for the superficiality of this overview and to those whom I haven’t mentioned but should have
• Thanks & best wishes to Nat in his 65th (?) birthday year!