

STEVE, THE PHYSICIST

BERNARD F WHITING, UNIVERSITY OF FLORIDA,
Capra Meeting, Meudon, FRANCE, June 28th, 2016

Outline

Steve, the physicist

Steve, the colleague

Steve, the athlete

Steve, the runner

Steve, the family man

Steve, the parent

Steve, the physicist

Time and distance are relative



Steve Detweiler

1947-2016

Steve, the physicist

- Three most cited papers:
 - Paper on 5th Dimension (with Chodos, 1980)
 - Paper on Quasi-normal modes (with Chandrasekhar, 1975)
 - Paper on pulsar timing measurements (1979)
- None is on the self force.

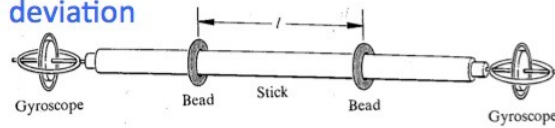




F.A.E. Pirani,
GW geodesic deviation



H. Bondi : beads on rod, energy in GW



J. Weber
Acoustic resonant bar
GW detectors



V. Braginsky (1974)
quantum limit



P. Bender
LISA (1975)



J. Taylor, R. Hulse, J. Weisberg
binary pulsar



S. Detweiler



D.C. Backer
Millisecond pulsar timing
GW detection

Chapel Hill meeting
J. Goldberg

M. Gertsenshtein
GW interaction with EM waves

Kruskal coordinates
Laser

X-ray astronomy

Kerr metric
transistor

Integrated circuit

Space program:
C. Misner, R.V. Pound,
P. Bender, RW
Laser GW detector,
X and K band ranging

GW from inflation

millisecond pulsars

1960

1970

1980

1990

J. Wheeler: Physical reality of GW, Weber bar

J. Bell & A. Hewish
pulsars
CMB discovery

BH in Cygnus X-1
PDP 11
Lab computer

Electromagnetically coupled GW detector (RW)

F. Estabrook
H. Wahlquist
space craft ranging

Battelle Seattle workshop

NSF report 1983
LIGO

Millisecond pulsar timing GW detection

COBE
cosmic structure

R. Vogt becomes 1st
Director of LIGO

R.H. Dicke: Eotvos experiment,
electronic cooling of mechanical instrument

Cosmic inflation

NSF Study Committee on Interferometric GW detection



A. Guth



A. Linde



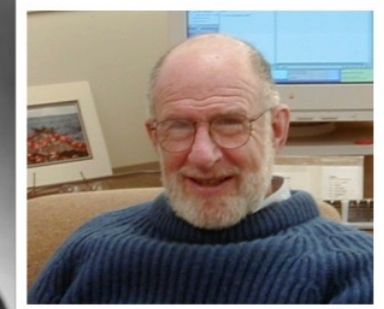
P. Steinhardt



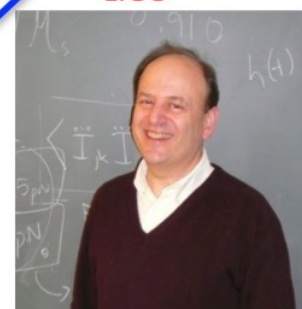
R. Isaacson



B. McDaniel



A. Sessler



P. Saulson

Steve, the physicist

- Elected fellow of American Physical Society in 2013.
Citation:
 - Computation of black-hole quasi-normal modes
 - Elucidation of pulsar timing to measure gravitational waves
 - Foundational contributions to the gravitational self-force
- No mention of prescient work on Kaluza-Klein theory



Steve the colleague

- Highly cited papers on self force:
 - Green's function decomposition (2002)
 - Consequence of the gravitational self force (2008)
 - Scalar fields and circular orbits (2002)
 - High-order post-Newtonian comparison (2010)
 - Perspective on gravitational self force (2005)
- Steve may have considered his second order paper his most valuable contribution.



Steve the colleague

- Where did the Detweiler-Whiting decomposition come from?
 - Steve had a decomposition (PRL 2001) which was almost phenomenological.
 - Mino, Sasaki and Tanaka (PRD 1997) had a different decomposition:
 - Required integration across the light cone and back - difficult to comprehend.
 - Steve was looking for a sort of Green's function like object, but De Witt indicated uniqueness.
 - It became evident that DeWitt was too strong, MST's arbitrariness could be avoided, and Green's function benefits could be realized.
 - Once the causal properties were recognized, the DW decomposition was born (PRD 2002).



Steve the athlete





Steve at Capra, 2015



Steve was out working hard

Steve the runner



Combining the best of three worlds

A university affiliation

A running weekend

Good food and wine

Steve was in his element



Steve the family man



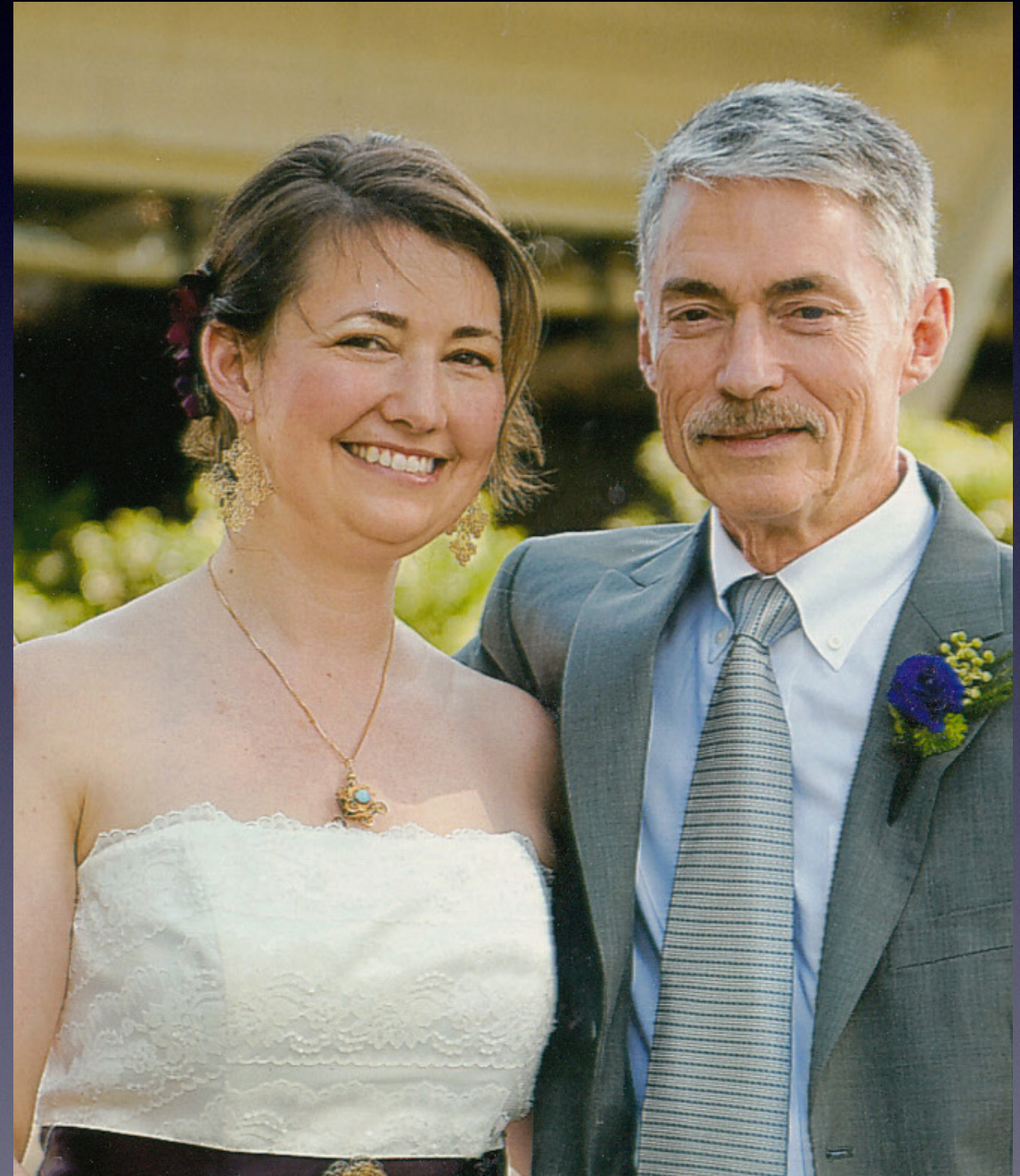
Steve the family man



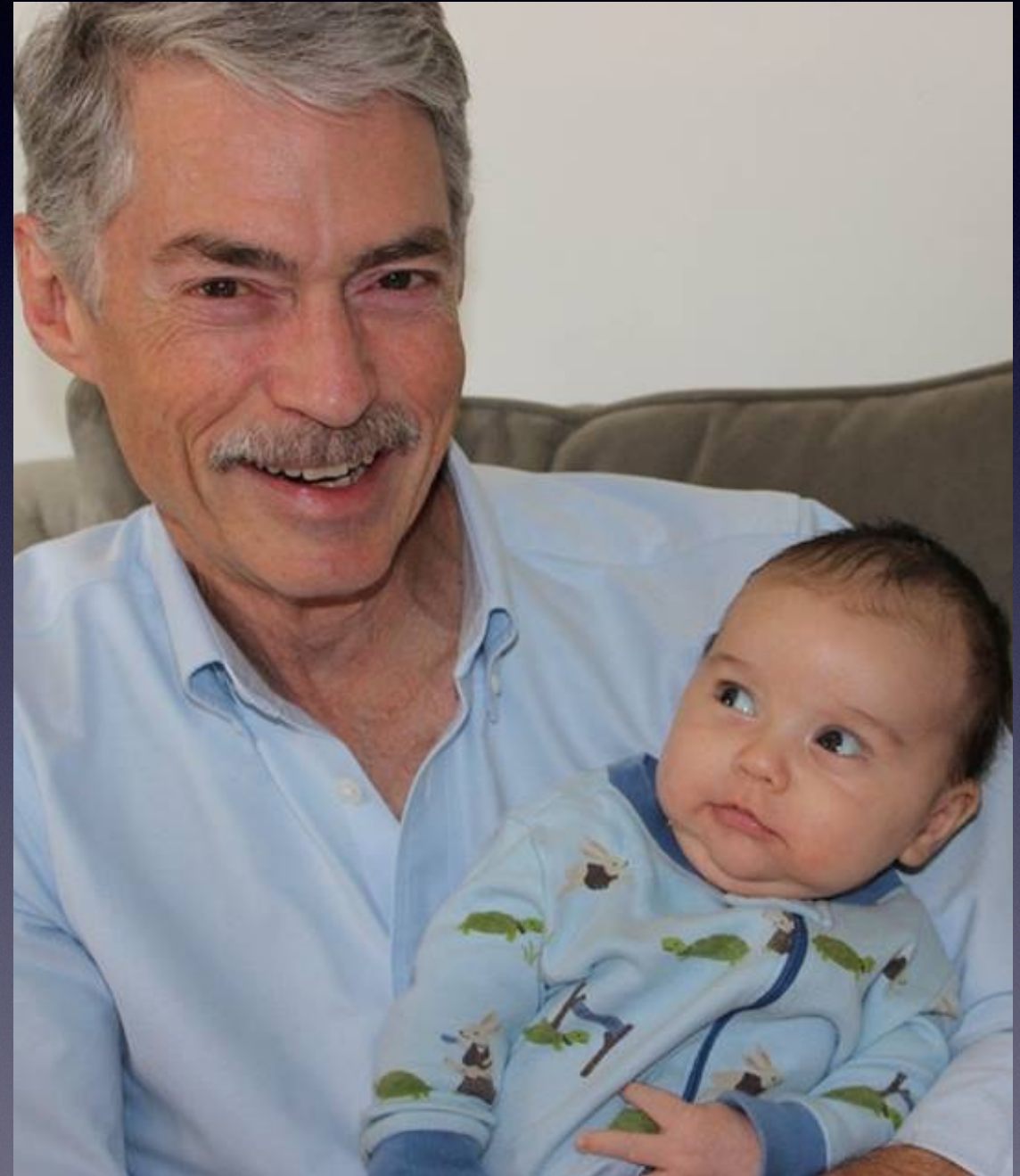
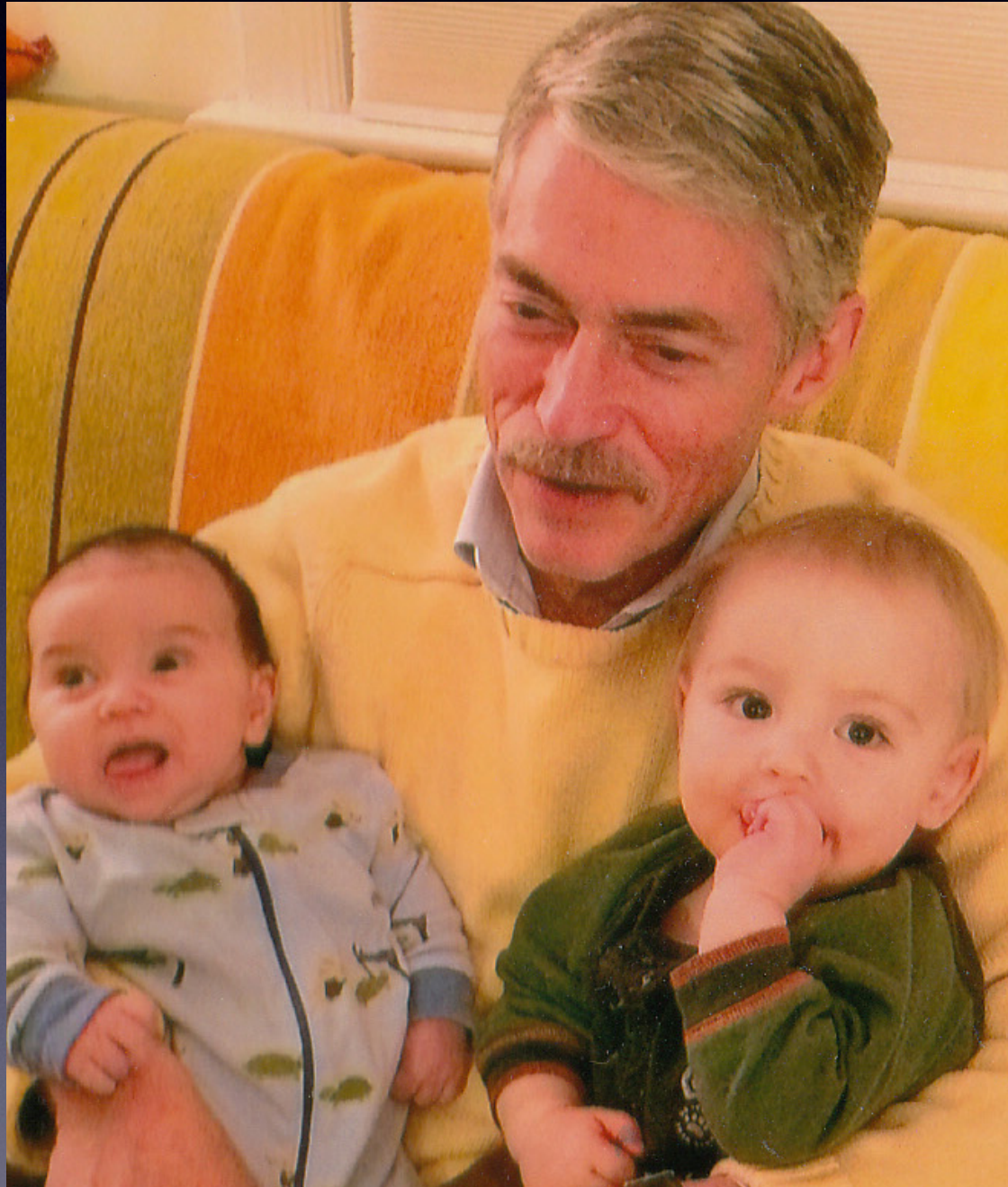
Steve the family man



Steve the parent



Steve the grandparent



Steve the physicist



Steve, the physicist

- Scientific contributions span four decades:
 - Breakthrough works
 - Deeply original perspective
 - Fertile ideas and creativity
 - Friend and colleague
- Already sorely missed.

