



Biographical introduction: This interview with Prame Chopra, previously a member of the Geology Department in the Faculties, is part of the ANU Emeritus Faculty's Oral History Program, involving retired staff members who were part of the university in its earlier life. The Oral History Program was initiated and developed by ANU Emeritus Faculty as a contribution to university and community understanding of the beginnings and development of ANU over the past six decades. Emeritus Faculty has a special interest in this period, since the Faculty's membership includes many of the people who helped shape the university in its early days, to make it the pre-eminent institution it is today.

Prame Chopra was born in Melbourne in 1953 and was educated at schools in Melbourne, Adelaide and Newcastle. Immediately prior to Prame's introduction to ANU he was an Honours student at the University of Newcastle. He came to Canberra in the winter of 1975 as one of a group of fourth year geology students invited from other Australian universities to the Research School of Earth Sciences. This was the first attempt by the School to foster better links with prospective PhD candidates from Australia.

Consequently Prame enrolled in the PhD program at RSES from 1976 to 1980. He worked in the high pressure/ high temperature laboratory of Professor Mervyn Paterson on the rheology of olivine rocks to better determine the flow properties of these rocks. This enabled modelling of the processes that drive Plate Tectonics/ Continental Drift. Prame said "I have very fond memories of my time at ANU as a postgraduate student".

Outside of his research, Prame was grateful to have had excellent support from Eric Broughton who was in charge of the Graduate Administration Section. Prame saw in Eric a marvellous administrator with a genuine care as much for the individual as he did for the processes that he administered. Prame said Eric's reputation went far and wide amongst the many graduate students that I knew".

Following the completion of his PhD Prame continued his research into olivine rheology as a Postdoctoral Fellow at RSES building on all the development work of the previous 4 years.

From 1982 to 1983 Prame moved to Cornell University in New York as a Postdoctoral Research Associate furthering studies on olivine and studies of the influence of partial melting on olivine rheology. After two years there he returned to Australia and from 1984 to 1996 worked in Canberra as a research geophysicist at what is now called Geoscience Australia. His research focus changed and he built up a truck-borne hydraulic fracturing system. A second truck set up for geophysical well-logging was also acquired. With this equipment he led small field parties in Eastern and Central Australia carrying out research on the state of stress in the Australian Crust as it relates to earthquake susceptibility and the physical properties of rocks in the upper few hundred metres of the Crust with particular reference to seismic exploration. In later years his research interests spread into satellite remote sensing of the Earth and into geographic information systems, particularly as a means of

studying the potential of the Australian continent for geothermal power generation. This latter geothermal work came to dominate his career and large research grants and overseas travel funds supported ongoing efforts to prove-up Australia's resource potential for "hot rocks" and to develop the interest of Australian industry.

In 1996 Prame took a temporary transfer from Geoscience Australia to the ANU's Department of Geology on a renewable 12 month contract as an academic level D. A turning point came in 1999 with the award of a large federal grant through Geoscience Australia to support a geothermal investigation in the Hunter Valley of NSW. Soon after he severed his connection with Geoscience Australia to become a member of the ANU.

His research into geothermal energy continued at the ANU and it quickly became clear from various discussions with the federal bureaucracy and with federal ministers that the only way that the levels of funding required to develop a prototype Australian geothermal "hot rock" power station was to "go commercial". However the government was unable to provide the necessary funding. While senior management at the ANU was happy for such a commercial direction to be explored ANUTech did not become involved because the "hot rock" concept was not patentable. The idea had been published in 1972 and considerable funding had already been spent to that point in the US, Europe and Japan. An early company failed but in 2000 Prame with two colleagues founded a second company: Geodynamics Limited. The company was provided significant seed funding for Geodynamics by the ANU and was ASX market-listed and raised significant funding in an Initial Public Offering. Prame sort approval from the ANU to be a non-executive director on the board of Geodynamics but in 2004 he was told by senior staff to resign from the board. "Supposed potential conflicts of interest between my role as an academic at ANU and my fiduciary responsibilities as a non-executive director of a public company were cited". Eventually Prame was given a choice, leave Geodynamics or leave ANU. After battling this issue with ANU management for 12 months he decided to leave ANU and remained on the Geodynamics board until he retired in 2012. During his time at Geodynamics the company raised capital of over \$400 million and received federal grants of more than \$32 million to develop Australia's first "hot rock" project and build a 1 MW geothermal power station south of Innamincka in NE South Australia. The power plant was run very successfully for five months in 2013 and it's performance exceeded expectations.

In addition to his research in geothermal energy at ANU Prame also developed a significant project targeting the delivery of spatial information over the Internet. The initial AEDOL (Australian Earth Data On Line) project also received significant funding from the federal government's Office of the Information Economy to develop a successful prototype. Subsequent funding from the ACT Chief Minister's Office, the ANU Chancellery and AusIndustry's Commercialisation of Emerging Technologies program saw the completion of business plans and the commercial launch of two Internet businesses, city2see.com and seasurface.com in 2003. In early discussions, the ANU declined to take a commercial stake in these businesses and relinquished any claim on the developed IP. Both businesses continue to operate today in a modest way.

Aside from his research Prame in 2000 took 3 months leave in a non-teaching semester and was an ABC Science Media Fellow based at the ABC in Ultimo. While there he developed and presented material for Radio National, ABC Local Radio, ABC TV (Catalyst) and ABC Online.

