James K. (Chip) Garner

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TECHNOLOGIES

- Software languages and tools (Listed at the bottom.)
- Heat transfer and thermal modelling
- Agent based modelling
- GIS (Geographic Information Systems) and moving maps
- GPS
- Sensors: air data, radiation and optical
- Space instruments
- Space power systems
- Experimental instruments
- Cryogenics
- Isotope separation
- Nuclear engineering

EXPERIENCE

July 2004 to Present

- Owner, Garner Total Energy
  GTE develops commercial software used in firefighter training, medical training, radiation monitoring, aircraft instruments and automotive testing. Recently began Talking Air, an internet connected mobile air monitor project. (See garnertotalenergy.com, TalkingAir.green or 追著跑.tw. Also https://github.com/chipgarner)

September 2002 to July 2004

- Project Manager, Thermo Electron
  Responsible for the design and deployment of Safety Guard System vehicle and package radiation monitoring equipment. Coordinating engineering efforts in Germany and Santa Fe. Working with customers on setup and optimization issues.

August 1997 to September 2002

- Consultant, Software Development
  Wrote code and designed user interfaces for embedded instrument

systems. Debugged existing programs in embedded systems.

August 1993 to August 1997

- Owner, Leucadia Computer Repair.
  Created (in October of 1995) a computer repair business providing solutions to hardware and software problems for home and small office computers.
- Owner, Soaring Innovations.
  Designed and manufactured a GPS based flight navigation computer for sailplanes, provided mail order glider instruments and supplies.
- Energy engineering consultant.
  Analyzed heat transfer and thermal hydraulics performance of an actinide burning fusion blanket with TSI Research engineering team.

August 1990 to August 1993

- Senior Engineer, Science and Engineering Associates, Inc.
  Provided engineering support and management on several nuclear safety related projects for the Department of Energy. Compiled and wrote design documents and performed a heat transfer analysis of the New Production - Modular High Temperature Gas Cooled Reactor.

1987 to August 1990

- Manager, Systems and Payloads Engineering Department, TRW.
  Functional manager of 35 degreed engineers creating several NASA and DOD electro-optical space instruments and experiments. Responsible for technical review and performance, budget review, proposal cost estimates, staffing, hiring and firing and cost center administration. Project Manager of TRW's efforts for the DOE Multi-Megawatt space nuclear power program. Principal Investigator for the Visible and Ultraviolet Experiment Operational Instrument Independent Research and Development Project.

1984 to 1987

- Section Head, Design Analysis Section, TRW Space and Technology Group.
  Supervised six engineers performing conceptual design, systems engineering, neutronics, heat transfer, thermal hydraulic and structural analysis in support of diverse projects including: The Space Station Solar Dynamic Power Systems Study, the FINESSE fusion technology development program, the Fusion Breeder Program and the X-Ray Laser Program. Performed extensive programming tasks using FORTRAN and SINDA.

1980 to 1984

- Member of the Technical Staff, TRW Energy Development Group.
  Performed and supported design and analyses of fusion and fusion-fission

hybrid reactor conceptual designs on programs led by the Department of Energy. Performed systems analysis, heat transfer, thermal hydraulics, stress, materials compatibility, neutronics, and safety analyses using FORTRAN.

1972 to 1975

- Owner, Clayfoot Pottery.
  Made and sold pottery, taught pottery to adults and children, and provided studio space and tutoring. Built custom designed high temperature ceramic kilns for several clients including state of the art fiber insulated kilns.

EDUCATION

BS Mechanical Engineering, UCSB, 1980
MS Mechanical and Nuclear Engineering, UCLA, 1985

PERSONAL

Sixty-four years old, married with three grown sons. Five time US National sailplane racing champion. Avid bicyclist.

PUBLICATIONS

Mr. Garner has over thirty technical publications, including the following:

"A Generalized Method for Optimizing the Mass of Space Power Systems," with T.J. Fitzgerald and B.B. Glasgow, Space Nuclear Power Systems, 1987.

"An Inherently Safe Tandem Mirror Fusion Blanket Concept," with C.F. Carson, R.H. Whitley, and J.D. Gordon, 7th Topical Meeting on the Technology Fusion Energy, June 1987.

"Uncertainties in Liquid Metal Fusion Blanket Design Windows", with M. A. Abdou, Fusion Technology, Vol. 10, No. 3, 1986.

"Passively Safe Tandem Mirror Fusion Blanket Afterheat Analysis," with C.F. Carson, J.D. Gordon, and R.H. Whitley, 1986 ASME Winter Annual Meeting, 1986.

"A Module for Testing a Lithium Cooled Tokamak Blanket in a Tandem Mirror Reactor," with et al., Fusion Technology, Vol. 8, No. 1, Part 2, July 1985.

"A High Performance Tandem Mirror Reactor Blanket," with J.D. Gordon, Fusion Technology, Vol. 8, No. 1, Part 2, July 1985.

"Safety Assessment of the Fusion Breeder," with I. Maya, Fusion Technology, Vol.

8, No. 1, Part 2, July 1985, an invited paper.

Programming Languages and Tools

C, C++, C#, Visual Basic, Java, Pascal, Javascript/HTML5/CSS, node.js, SQL, Git, SVN, Windows Embedded, Linux, IBM and Microsoft cloud products, TDD, Scrum.