

CURRICULUM VITAE: Richard K. Obousy, Ph.D.

CONTACT INFORMATION	Tel: (254) 366-6766, Houston, Texas 77054 Email: RichardObousy@gmail.com
EDUCATION	<p><i>September, 2002 — December, 2008: Ph.D. in Theoretical Physics.</i> Department of Physics, Baylor University, Texas, USA.</p> <ul style="list-style-type: none">• Dissertation: <i>Investigation into Compactified Dimensions: Casimir Energies and Phenomenological Aspects.</i>• Classes taken: Mechanics (I and II), Quantum Mechanics (I, II and III), Mathematical Physics (I and II), Electromagnetic Theory (I and II), Statistical Mechanics, Quantum Field Theory (I, II and III), Nuclear and Particle Physics, General Relativity, Complex Variables, Linear Algebra and Matrix Theory, Computer Models in Physics, Advanced PDE's. GPA: 3.5, Total 105 hours. <p><i>September, 1995 — June, 1999: Master of Physics (M.Phys) in Physics with Space Sciences and Technology.</i> Department of Physics and Astronomy, Leicester University, England.</p> <ul style="list-style-type: none">• Thesis: <i>Searching for Extant Life on Mars: The ATP- Firefly Luciferin / Luciferace Technique.</i>• Vice president of astronomy club.
IMMIGRATION STATUS	<p><i>November 18, 2009: Received US Citizenship.</i> Became naturalized US Citizen.</p>
ACADEMIC PUBLICATIONS	<p>R. Obousy and A. Saharian, “Casimir energy and the possibility of higher dimensional manipulation”, to appear in <i>Phys.Rev. D</i>, (2010), arXiv:0906.4601 [gr-qc].</p> <p>R. Obousy and others “Project Icarus: Son of Daedalus - Flying Closer to Another Star”, to appear in <i>JBIS</i>. (2010).</p> <p>R. Obousy, “Investigation into Compactified Dimensions: Casimir Energies and Phenomenological Aspects.”, Ph.D Dissertation (2009), arXiv:0901.3640 [gr-qc].</p> <p>R. Obousy and G. Cleaver, “Casimir Energy and Brane Stability”, to appear in <i>Nucl.Phys. B</i> (2009), arXiv:0810.1096 [hep-th].</p> <p>R. Obousy, M. Robinson and G. Cleaver, “A Non-Standard String Embedding of $E(8)$.”, <i>Mod.Phys.Lett A24</i>, 1577-1582 (2009), arXiv:0810.1038 [hep-ph].</p> <p>R. Obousy and G. Cleaver, “Radius Destabilization in Five Dimensional Orbifolds from Lorentz Violating Fields”, <i>Mod.Phys.Lett A24</i>, 1495-1506 (2009), arXiv:0805.0019 [gr-qc].</p> <p>R. Obousy and G. Cleaver, “Warp Drive: A New Approach”, <i>JBIS V61</i>, 149-165 (2008), arXiv:0510141 [hep-ph].</p> <p>R. Obousy and others, “Stringent Phenomenological Investigation into Heterotic String Optical Unification”, <i>Phys.Rev D75</i>, 026007 (2007), arXiv:0810.1038 [hep-ph].</p>

R. Obousy and others, “**Heterotic String Optical Unification**”, Based on a talk given at 2nd International Conference on String Phenomenology 2003, Durham, England, 29 July - 4 August 2003, [arXiv:0310155v2 \[hep-ph\]](#).

R. K. Obousy, A. C. Tziolas, M. R. Sims, “**Searching for Extant Life on Mars: The ATP- Firefly Luciferin / Luciferase Technique**”, *JBIS*, March/April, (2000)

POPULAR ARTICLES

- R. Obousy, “**A Short History of Dark Energy**”, *FreiHonnefer*, August, (2008)
- R. Obousy, “**Additional Dimensions In Physics**”, *FreiHonnefer*, September, (2008)
- R. Obousy, “**The Casimir Effect**”, *FreiHonnefer*, October, (2008)
- R. Obousy “**Putting the ‘Warp’ into Warp Drive**”, *Spaceflight Magazine V50* pp.149 (2008), [arXiv:0807.1957 \[pop-ph\]](#).

CONFERENCES AND COLLOQUIA

September 30th, 2009: Invited Speaker. “**Interstellar Propulsion: Challenges and Developments 30 Years After Daedalus**”. Project Daedalus - Three Decades On, British Interplanetary Society, London, England.

November 30th, 2008: Invited Speaker. “**Investigation into Compactified Dimensions: Casimir Energies and Phenomenological Aspects**”. Ph.D Dissertation Defense. Department of Physics, Baylor University, Texas, USA.

November 15th, 2007: Invited Speaker. “**Warp Drive: A New Approach**”. Exotic Propulsion Symposium, British Interplanetary Society, London, England.

February 14th, 2007: Invited Speaker. “**Supersymmetry Breaking Casimir Warp Drive**”. Space Technology and Applications International Forum, University of New Mexico, Albuquerque, New Mexico.

July 17th, 2009: Invited Speaker. “**Casimir Energy, Extra Dimensions and a Novel Approach to Interstellar Propulsion**”. Fort Bend Astronomy Club, Houston, Texas.

September 5th, 2008: Invited Speaker. “**Vacuum Physics, Extra Dimensions and Dark Energy**”. CASPER Seminar Series, Houston, Texas.

AWARDS

AFFILIATIONS AND

OTHER

ACCOMPLISHMENTS

Awards:

- U.K Daily Telegraph top ten ‘Greatest Scientific Achievements, Discoveries and Breakthroughs of 2008’
- Graduate School Travel Award, 2005/2007
- Roy Stiegler, Jr. Scholarship, 2007
- Shim and Theresa Park Scholarship, 2005
- Shim and Theresa Park Scholarship, 2004
- Baylor University Teaching Assistantship, 2002 to 2008
- Leicester University Space Center Scholarship, 1999
- Norton Knatchbull award for 6th form progress, 1998
- Pfizer Award for Mathematics and Physics, 1998

Career Training:

July, 2005 : **Prospects in Theoretical Physics**. Institute for Advanced Study, Princeton, New Jersey.

- Intensive two-week summer program which provided lecture courses and informal sessions on the latest advances in theoretical physics.

Computer Training:

1999 - 2002 : **Professional training while employed with UK M.O.D.**

- Matlab training course (40 hours)
- IDL programming course (40 hours)
- UNIX fundamentals and shell scripting (40 hours)
- Radar Fundamentals (40 hours)

Journal Reviewer:

- Nuclear Physics B
- Journal of the British Interplanetary Society
- Journal of Astrobiology

COMPUTER EXPERIENCE

- Extensive Programming expertise in FORTRAN, Matlab, IDL, UNIX, HTML, L^AT_EX.
- Expert in Adobe Photoshop and all Office products.

PROFESSIONAL EXPERIENCE

March, 2010 – Present: **Adjunct Professor of Physics**. ITT Tech, Houston, Texas.

- Teaching undergraduate physics classes (theory and experiment)
- Teaching introductory science classes including physics, chemistry, biology, astronomy and geology.
- Preparation of lectures.
- Extra-curricular tutoring for more ambitious students

May 2010 – July 2010: **Adjunct Professor of Physics**. Houston Community College, Houston, Texas.

- Taught 5-week summer session for calculus based physics.
- Responsibilities included preparation of relevant material for students facing calculus based physics for the first time.
- Motivating students and generating enthusiasm for what is typically considered a challenging topic.
- Preparation of, and grading of weekly exams.

December, 2008 – March 2009: **Chief Propulsion Consultant for ‘Into the Universe with Stephen Hawking’ Episode 2 - Time Travel**. A Discovery Channel Production.

- Served as Chief consultant for production team on matters of interstellar propulsion and relativistic time-dilation for accelerated observers.
- Calculation of trip times, fuel ratios and relativistic effects for hypothetical antimatter propelled spacecraft.

- Translation of physics and mathematics into something that could be digested by wide audience.

*September, 2002 – December 2008: **Ph.D Researcher and Teaching Assistant.*** Baylor University, Waco, Texas.

- 105 hours advanced physics and math classes taken.
- Taught undergraduate labs, tutorials and coaching for duration of Ph.D.
- Performed research and published numerous peer reviewed papers.
- Presented at numerous conferences and colloquiums.

*February, 2009 – Current: **Chief Propulsion Design Scientist.*** Project Icarus, British Interplanetary Society, London, England.

- Began work on 5 year volunteer design study serving as successor to the celebrated ‘Project Daedalus’ carried out between 1973 and 1978 by the British Interplanetary Society.
- Research and development of theoretical fusion pulse-propulsion.
- Research into Antimatter catalyzed fusion pulse propulsion.
- Examination of positron and anti-proton production facilities.
- Currently preparing paper on the Oberth 2-burn maneuver to increase spacecraft delta v efficiency.
- Designed and maintain website to engage public.
- Attended and presented at conference in British Interplanetary Society Headquarters, London (Sep. 2009).
- Completed paper due for publication in early 2010.

*Nov, 1999 — August 2002: **Research Scientist.*** Defense Evaluation and Research Agency, Farnborough, England.

- Awarded UK Secret Clearance.
- Researched novel methods to analyze depolarization amplitudes to extract useful information from satellite radar images.
- Constructed Matlab code to utilize FFT’s and High/Low bandpass filters for automated ship detection and recognition.
- Constructed Matlab/IDL code to utilize minimum distance algorithms for automated crop monitoring and identification.
- Utilized advanced matrix decomposition techniques to locate and identify military targets viewed from various angles.
- Created numerical algorithms to extract useful information from Synthetic Aperture Radar images.
- Evaluation of SAR images for determination of Cryosphere components.
- Built minimum distance algorithms to distinguish glaciers, ice sheets, ice floe and ice thickness.
- Organized logistics for, and participated in, Pacific nation experimental radar trial in Hawaii.
- Became proficient in algorithm design and implementation in IDL, Matlab, UNIX Shell Scripting, matrix manipulation, and various other computational methods.
- Authored numerous M.O.D technical reports detailing all progress.

January, 2009 – Current: **Founder and CEO, Richard Obousy Consulting LLC.** Houston, Texas, USA.

- Founder of physics consulting company.
- Awarded \$15k contract with Bigelow Aerospace to study and explore dark energy as a possible artifact of higher dimensions.
- Awarded \$2k contract with the Austin Institute for Advanced Study, to write critical analysis and review of research proposal.
- Wrote, hosted and co-produced online documentary ‘Interstellar Journey’, for the purpose of public outreach and education.
- Published research paper ‘Casimir energy and the possibility of higher dimensional manipulation.’ to be published in Physical Review D.

January, 2009 – Current: **Founder and Manager.** CitizenShipper LLC, Houston, Texas, USA.

- Awarded \$55k Startup capital for new company I founded in the final year of graduate school.
- Generated novel online marketplace with over 7,000 currently active members.
- Designed database structure.
- Roles in business include: business development, marketing, customer relations.
- Steadily grew business into revenue stream of \approx \$2k per month during recession.
- Lead team of 3 programmers to assist with site creation and development.
- Taken lead role in Search Engine Optimization development.
- Grew website into marketplace for over \$80k in contracts.

May, 2007 – August 2007: **Hedge Fund Internship.** Saracen Energy, Houston, Texas.

- Developed object oriented Matlab code based on pair trading methods to find potential trades from a large database.
- Acquired first-hand experience in trading and finding trading structures with good risk/reward qualities.
- Products of the work were implemented and utilized by the hedge fund.

TEACHING
EXPERIENCE

September, 2002 – December, 2008: **Teaching Assistant.** Baylor University, Waco, Texas, USA.

- Awarded teaching scholarships.
- Taught numerous undergraduate physics labs.
- Supervised summer undergraduate programs.
- Private tutoring of numerous students.

September, 2006 – December, 2007: **Tutorial Assistant.** Baylor University, Waco, Texas, USA.

- Taught physics tutorials which place emphasis on pedagogical aspects of problem solving (only taught by small fraction of Teaching Assistants considered to be the most capable).

September, 2005 – December, 2007: **Recitation Assistant.** Baylor University, Waco, Texas, USA.

- Recitation classes are a novel teaching concept based on a far more ‘hands-on’ approach to teaching, with the instructor engaging with the students 100% of the class time. The focus is on the students coming to a deeper comprehension of underlying physical principles through careful Socratic guidance from the teacher(only taught by small fraction of Teaching Assistants considered to be the most capable).

March, 2005 — June, 2005: MCAT Review. Falcon Physicians Review, Dallas, Texas, USA.

- Wrote 300 page manual designed to assist students prepare for the MCAT exam.
- Hosted 8 hour instructional video to complement manual.

PERSONAL:

- USHPA Hang 1 and 2 Hang Glider License
- PADI SCUBA license
- Hobbies include running, rock climbing, hang gliding and travel
- Avid reader of science fiction, biographies and world history

References Available on Request