

**DONALD R. FROHLICH, Ph.D.**

**Full Professor, Biology Department  
Fellow in Faith and Science, Center for Faith and  
Culture  
University of St. Thomas**

**Department of Biology  
3800 Montrose Blvd.  
Houston TX 77006  
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## **EDUCATION**

- Ph.D.** 1989. Biology, Utah State University, Logan  
**M.S.** 1983. Biology, Utah State University, Logan  
**B.S.** 1978. Biology, Human Ecology, The College of Idaho, Caldwell

## **TEACHING EXPERIENCE**

**Assistant/Associate/Full Professor: Undergraduate Biology:** Evolution, General Biology (Population and Evolutionary Biology), Developmental Biology, Invertebrate Zoology, Molecular Biology, Research Methods, Methods in Molecular Ecology, **Catholic Studies Program:** Catholicism and the Natural and Social Sciences, **Honors Program:** Revolution and the New Empires. **Graduate Program (Liberal Arts):** Faith and Science. **Graduate Program (Philosophy):** Science and Metaphysics.

**Graduate Teaching Assistant:** General Biology and Zoology, Plant Biology, Human Physiology, Insect Physiology and Internal Anatomy, Insect Ecology

**Supervision of Undergraduate Research:** 1986-1989 (USU), 1989-1994 (UA), 1994-Present (UST)

## **RESEARCH ACTIVITIES**

**Current:** Evolution and Emergence, Science and Spirituality at an Interface, Biosemiotics. Molecular population biology, phylogenetics, and evolution in Invertebrates.

**Post- Doctoral and Visiting Scientist:** Insect biochemistry and genomics, Molecular population biology of Mediterranean fruit fly (*Ceratitis*). Advisor: Michael A. Wells.

**Doctoral:** Separation and characterization of multiple esterases and glutathione S-transferases in a solitary bee; kinetics and inhibition by organophosphorus insecticides, synthetic derivatives of chalcone and related polyphenolics. Advisor: William A. Brindley.

**Research Assistant:** Alfalfa seed pollination and pest management, detection and management studies of insecticide resistance

**Masters:** Sociobiology and ecology of solitary bees; reproductive ecology and pollination. Advisor: Frank D. Parker

**PROFESSIONAL EXPERIENCE**

**Professor** (2003 to **present**) Department of Biology, University of St. Thomas, Houston, TX

**University Fellow** (2015 to **present**) **Faith and Science**, Center for Faith and Culture, University of St. Thomas, Houston, TX

**Visiting Professor** (10/11 2017, sabbatical) Department of Philosophy, El Rosario University, Bogota CO

**Visiting Professor** (8/9 2017, sabbatical) Department of Philosophy, UPAEP, Puebla MX

**Visiting Professor** (2016 - **present**) School of Philosophy, Papal Seminary and Jnana-Deepa Vidyapeeth Pontifical Institute for Philosophy and Religion, Pune, India.

**Department Chair** (2001 to 2007) Department of Biology, University of St. Thomas, Houston, TX

**Cullen Trust / Harry K. and Albert K. Smith Endowed Chair** (1995 to 2001) University of St. Thomas, Houston TX

**Associate Professor** (1997 to 2003) Department of Biology, University of St. Thomas, Houston TX

**Assistant Professor** (1994 to 1997) Department of Biology, University of St. Thomas, Houston TX

**Senior Research Fellow** (1994 to 1995) Consiglio Nazionale Delle Ricerche, Rome Italy. RAISA, Departments of Physiology and Biology, University of Pavia, Pavia, Italy.

**Research Scientist** (1993 to 1994) Department of Plant Sciences, University of Arizona

**Post-Doctoral Research Associate** (1989 to 1993) Department of Biochemistry and Center for Insect Science, University of Arizona

**Visiting Scientist** (8/1991 to 4/1992) Institute for Molecular Biology and Biotechnology, Insect Molecular Genetics Group, Heraklion, Crete, Greece

**Graduate Research and Teaching Assistant** (1984 to 1988) Department of Biology, Utah State University

**Research Assistant** (1983 to 1984) Department of Plant, Soil, and Entomological Sciences, University of Idaho, SW Idaho Research and Extension Center, Parma

**Graduate Research and Teaching Assistant** (1980 to 1982) Department of Biology and USDA Bee Biology and Systematics Laboratory, Utah State University

**Private Pesticide Consultant and State Field Supervisor** (1979 to 1980) Integrated Pest Management Program on Alfalfa Seed, University of Idaho Cooperative Extension Service, Caldwell

**REFEREED JOURNAL ARTICLES (students underlined)**

- 43.** **Frohlich, D.R.** and Choate, R.A. **2017.** *In Medias Res: A Resolution of Some False Dichotomies in Origins of Life Research.* **Metafísica y Persona** 18: 35-60.
- 42.** Perli-Noguera, E., and **Frohlich, D.R.** **2017.** Engaging the Religion-Science Dialog: Formation of the “Whole” Student in an Undergraduate Liberal Arts University. **Quarentibus, Teologia y Ciencias.** Año 5 No. 8: 71-81.
- 41.** Elgin, Sarah C R, Charles Hauser, Teresa M Holzen, Christopher Jones, Adam Kleinschmit, Judith Leatherman (GEP Partners, **Frohlich, D.R.**). **2017.** The GEP: Crowd-Sourcing Big Data Analysis with Undergraduates. **Trends in Genetics** 33: 81-85.
- 40.** Lopatto D...**Frohlich DR ...** Elgin SCR (**65 authors**). **2014.** A Central Support System Can Facilitate Implementation and Sustainability of a Classroom-Based Undergraduate Research Experience (CURE) in Genomics. **CBE - Life Sciences Education** 13: 711-723.
- 39.** **Frohlich, D.R.** **2014.** Biology, Peirce, and Biosemiotics: Commentaires ‘Cénoscopie’ d’un Biologiste. **The American Journal of Semiotics** 30: 173-188.
- 38.** Shaffer CD ... **Frohlich DR ...** Elgin SCR (**84 authors**). **2014.** A Course-Based Research Experience: How Benefits Change with Increased Investment in Instructional Time. **CBE - Life Sciences Education** **13: 111-130.**
- 37.** Shaffer CD ... **Frohlich DR ...** Elgin SCR (**52 authors**). **2010.** The Genomics Education Partnership: Successful Integration of Research into Laboratory Classes at a Diverse Group of Undergraduate Institutions. **CBE - Life Sciences Education** 9: 104-118.
- 36.** Coleman, R.J., J.P. Hereward, P.J. De Barro, **D.R. Frohlich**, J.J. Adamczyk and J.A. Goolsby. **2008.** Molecular Comparison of *Creontiades* Plant Bugs from South Texas and Australia. **Southwestern Entomologist** 33: 111-117.
- 35.** De Barro, P.J., Sri Hendrastuti Hidayat, **D.R. Frohlich**, Siti Subandiyah and Shigenori Ueda. **2008.** A virus and its vector, pepper yellow leaf curl virus and Bemisia tabaci, two new invaders of Indonesia. **Biological Invasions** 10: 411-433.
- 34.** Boykin, Laura M., Robert G. Shatters, Jr., Rosemarie C. Rosell, Cindy L. McKenzie, Ruth Ann Bagnall. Paul De Barro, and **Donald R. Frohlich.** **2007.** Global relationships of Bemisia tabaci (Hemiptera: Aleyrodidae) revealed using Bayesian analysis of mitochondrial COI DNA sequence. **Molecular Phylogenetics and Evolution** 44: 1306-1319.

33. Boykin, Laura M., Ruth Ann Bagnall, **Donald R. Frohlich**, David G. Hall, Wayne B. Hunter, Catherine S. Katsar, Cindy L. McKenzie, Rosemarie Rosell, and Robert G. Shatters, Jr. **2007**. Twelve polymorphic microsatellite loci from the Asian Citrus Psyllid, *Diaphorina citri* (Kuwayama), the vector for citrus greening disease (Huanglongbing). **Molecular Ecology Notes** 7: 1202-1204.
32. Goolsby, J.A., P.J. DeBarro, J.W.H. Trueman, J.R. Makinson, R.W. Pemberton, D.M. Hartley, **D.R. Frohlich**. **2006**. Matching the origin of an invasive weed for selection of an herbivore haplotype for a biological control program. **Molecular Ecology** 15: 287-297.
31. DeBarro, P.J., J.W.H. Trueman, **D.R. Frohlich**. **2005**. *Bemisia argentifolii* is a race of *B. tabaci*: Molecular genetic differentiation of *B. tabaci* populations around the world. **Bulletin of Entomological Research** 95: 193-203.
30. Nirgianaki, A., G.K. Banks, **D.R. Frohlich**, Z. Veneti, H.R. Braig, T.A. Miller, I.D. Bedford, P.G. Markham, C. Savakis, K. Bourtzis. **2003**. Wolbachia infections of the whitefly *Bemisia tabaci*. **Current Microbiology** 47: 93-101.
29. Calvert, L.A., M. Cuervo, J. A. Arroyave, L. M. Constantino, A. Bellotti, **D.R. Frohlich**. **2001**. Morphological and mitochondrial DNA marker analyses of adult whiteflies (Homoptera: Aleyrodidae) colonizing cassava and beans in Colombia. **Annals of the Entomological Society of America** 94: 512-519.
28. **Frohlich, D.R.**, I. Torres-Jerez, I.D. Bedford, P.G. Markham, J.K. Brown. **1999**. A phylogeographic analysis of the *Bemisia tabaci* species complex based on mitochondrial DNA markers. **Molecular Ecology** 8: 1683-1692.
27. Akuffo, H., Hultmark, D., Engström, Å., **Frohlich, D.**, and Kimbrell, D.A. **1998**. Drosophila antibacterial protein, cecropin A, differentially affects non-bacterial organisms such as *Leishmania* in a manner different from other amphipathic peptides. **International Journal of Molecular Medicine** 1: 77-82.
26. Rosell, R.C., I.D. Bedford, **D.R. Frohlich**, R.J. Gill, J.K. Brown, P.G. Markham. **1997**. Phylogenetic analysis of morphological variation in geographically isolated populations of *Bemisia tabaci*. **Annals of the Entomological Society of America** 90: 575-589.
25. **Frohlich, D.R.**, B.A. Stevenson, A.M. Peterson, M.A. Wells. **1996**. Mitochondrial cytochrome c oxidase subunit I from *Manduca sexta* and a comparison to other invertebrate genes. **Comparative Biochemistry and Physiology B: Biochemistry and Molecular Biology** 113B: 785-788.
24. Brown, J.K., S.A. Coats, I.D. Bedford, P.G. Markham, J. Bird, **D.R. Frohlich**. **1995**. Characterization and distribution of esterase electromorphs in the whitefly, *Bemisia tabaci*. **Biochemical Genetics** 33: 205-214.
23. **Frohlich, D.R.** and M.A. Wells. **1994**. Codon usage patterns among genes and cDNAs for Lepidopteran hemolymph proteins. **Journal of Molecular Evolution** 38: 476-481.

22. Tepedino, V.J., **D.R. Frohlich**, C.R. Baird. **1994**. The effect of inter-tunnel distance and nest surface aspect on progeny production rate and sex ratio in the alfalfa leafcutting bee, *Megachile rotundata*. **Journal of Economic Entomology** 87: 27-30.
21. Wang, X-Y., **D.R. Frohlich**, M.A. Wells. **1993**. Polymorphic cDNAs encode for the methionine-rich storage protein from *Manduca sexta*. **Insect Molecular Biology** 2: 13-20.
20. **Frohlich, D.R.**, A.S. Robinson, M.A. Wells. **1993**. Mediterranean fruit fly, *Ceratitis capitata* (Wiedemann), mitochondrial DNA: Genes and secondary structures for six t-RNAs. **Insect Molecular Biology** 1: 165-169.
19. Spoonamore, J.F., **D.R. Frohlich**, M.A. Wells. **1993**. p-Nitrophenylacetate hydrolysis by honey bee esterases: Kinetics and inhibition. **Xenobiotica** 23: 279-284.
18. **Frohlich, D.R.** and M.A. Wells. **1991**. Peptide amphipathy: A novel approach to potential new insecticides. **International Journal of Peptide and Protein Research** 37: 2-6.
17. **Frohlich, D.R.** **1990**. Substrate specificity of esterases in a solitary bee, *Megachile rotundata* (Fab.) (Hymenoptera: Megachilidae): Variability in sex, age, and life stage. **Biochemical Systematics and Ecology** 18: 539-547.
16. **Frohlich, D.R.**, W.A. Brindley, T.E. Burris, N.N. Youssef. **1990**. Characterization of esterase isozymes in a solitary bee, *Megachile rotundata*: Developmental multiplicity and adult variability. **Biochemical Genetics** 28: 347-358.
15. **Frohlich, D.R.**, E.A. Boeker, W.A. Brindley. **1990**. The kinetics and inhibition of p-nitrophenylacetate hydrolyzing esterases in a solitary bee, *Megachile rotundata* (Fab.). **Xenobiotica** 20: 481-487.
14. **Frohlich, D.R.**, T.E. Burris, W.A. Brindley. **1989**. Characterization of glutathione S-transferases in a solitary bee, *Megachile rotundata* (Fab.) and inhibition by chalcones, flavone, quercetin, and tridiphanediol. **Comparative Biochemistry and Physiology** 94B: 661-665.
13. **Frohlich, D.R.**, W.H. Clark, F.D. Parker, T.L. Griswold. **1988**. The xylophilous bees and wasps of a high, cold desert: Leslie Gulch, Oregon (Hymenoptera: Apoidea, Vespoidea). **Pan-Pacific Entomologist** 64: 266-269.
12. **Frohlich, D.R.** and V.J. Tepedino. **1986**. Sex ratio, parental investment, and interparent variability in nesting success in a solitary bee. **Evolution** 40: 142-151.
11. **Frohlich, D.R.** and F.D. Parker. **1985**. Observations on the nest building and reproductive behavior of a resin gathering bee: *Dianthidium ulkei* (Cresson). **Annals of the Entomological Society of America** 78: 804-810.
10. **Parker, F.D.** and D.R. Frohlich. **1985**. Studies on the management of the sunflower leafcutter bee: *Eumegachile* (*Sayapis*) *pugnata*. **Journal of Apicultural Research** 24: 125-131.

9. Tepedino, V.J. and D.R. Frohlich. 1984. Fratricide in a parsivoltine bee, *Osmia texana*. **Animal Behavior** 32: 1265-1266.
8. Tepedino, V.J. and D.R. Frohlich. 1984. Fratricide in *Megachile rotundata* a non-social bee: Impartial treatment of sibs and non-sibs. **Behavioral Ecology and Sociobiology** 15: 19-23.
7. Frohlich, D.R. and F.D. Parker. 1983. Nest building behavior and development of the sunflower leafcutter bee: *Eumegachile (Sayapis) pugnata* (Say) (Hymenoptera: Megachilidae). **Psyche** 90: 193-209.
6. Parker, F.D. and D.R. Frohlich. 1983. Hybrid sunflower pollination by a manageable sunflower specialist: The sunflower leafcutter bee. **Environmental Entomology** 12: 576-581.
5. Frohlich, D.R. 1983. On the nesting biology of *Osmia (Chenosmia) bruneri* Cockerell (Hymenoptera: Megachilidae). **Journal of the Kansas Entomological Society** 56: 123-130.
4. Tepedino, V.J. and D.R. Frohlich. 1982. Mortality factors, pollen utilization, and sex ratio in *Megachile pugnata* a candidate for commercial sunflower pollination. **Journal of the New York Entomological Society** 90: 269-274.
3. Clark, W.H., D.R. Frohlich, P.L. Comanor. 1982. Shrike predation on the scorpion *Anuroctonus phaidactylus* (Wood), and on a solpugid (Scorpionida: Vejovidae; Solpugida). **Pan-Pacific Entomologist** 58: 64.
2. Frohlich, D.R., C.D. McNeal, C.R. Baird, R.M. Bitner. 1980. A consultant's guide to integrated pest management in alfalfa seed. **University of Idaho Miscellaneous Publications** 59: 1-11.
1. Frohlich, D.R. and W.H. Clark. 1976. Ecological associations of scorpions and *Yucca* spp. in Baja California Norte, Mexico. **Journal of the Idaho Academy of Sciences** 12: 87-93.

## INVITED REFEREED REVIEWS

Brown, J.K., **D.R. Frohlich**, R. Rosell. **1995**. The sweetpotato/silverleaf whiteflies: Biotypes of Bemisia tabaci Genn. or a species complex?. **Annual Review of Entomology** 40: 511-534.

## INVITED BOOK CHAPTERS

Piedra, Felipe-Andrés, **D. R. Frohlich**. **2019**. Roadmaps to the Adjacent Possible: Evolution's Ebb and Flow. In Press. K. Pandikattu (ed) **To Dream and Dare: Articles in Memory of Prof Kurien Kunnumpuram SJ**. Christian World Imprints, New Delhi.

**Frohlich, D.R.**, and C.M. Gomez Rincon. **2019**. Rediscovering the Sacred in Nature. Pp. 149-166 in: K. Pandikattu (ed) **Symbiotic Relation. Christian Trinity and Hindu Advaita as Experienced by Raimundo Panikkar and Francis D'Sa**. New Delhi India: ISPCK Publishing, 214 p. ISBN: 978-81-8465-000-00

**Frohlich, D.R.**, Felipe-Andrés Piedra. **2018**. Valuing Unities: Reflections from Biology, Philosophy, and Religion on Our Shared Future. Pp. 211-219 in: K. Pandikattu and T. Karimundackal (eds) **Melodies from the Flute. Dialogue between Religions and Cultures**. JDV Philosophy Series – 2, Memorial Volume for Indian Christian Philosopher Rev Noel Sheth SJ, 333 p. ISBN: 978-93-5148-326-7

**Frohlich, D.R.** **2018**. The Hiddenness of God: Populations and Possibilities. Pp 293-305 In: Pichalakkattu, Binoy (ed), **Science-Religion Dialogue and Its Significance**. Bengaluru, India: ATC Publishers, 329 p. ISBN: 978-93-86516-35-0

**Frohlich, D.R.** **2016**. The Essence of "Not Two": Evolutionary Biology and the Roman Catholic Tradition. Pp 65-74 In: Casanova, Carlos A. (ed) **Investigación Científica y Fe Católica** Comentario al libro de los Salmos de Santo Tomás / Traductor: Carlos A. Casanova. -- Santiago: RIL editores - Centro de Estudios Tomistas, CET, 2016. 478 p. ISBN: 978-956-01-0306-2

Calvert, L., J.K. Villareal and **D.R. Frohlich**. **2002**. Using molecular techniques to analyze whitefly species and biotypes in Latin America. In: Sustainable Integrated Management of Whiteflies as Pests and Vectors of Plant Viruses in the Tropics. **CGIAR (Consultative Group on International Agriculture) Publ.** 300 pp. P. Anderson Ed.

**Frohlich, D.R.**, J.K. Brown, I.D. Bedford, P.G. Markham. **1995**. Mitochondrial 16S ribosomal subunit as a molecular marker in Bemisia tabaci and implications for population variability. Chapter 11 In: **BEMISIA 1995: Taxonomy, biology, damage, control and management**. D. Gerling and R.T. Mayr, eds. Andover, England: Intercept Ltd. Publ.

Brown, J.K., J. Bird, **D.R. Frohlich**, R. Rosell, I.D. Bedford, P.G. Markham. **1995**. The relevance of variability within the Bemisia tabaci species complex to epidemics caused by subgroup III geminiviruses. Chapter 6 In: **BEMISIA 1995: Taxonomy, biology, damage, control and management**. D. Gerling and R.T. Mayr, eds. Andover, England: Intercept Ltd. Publ.

Markham, P.G., I.D. Bedford, S. Lui, **D.R. Frohlich**, R.C. Rosell, and J.K. Brown. **1995**. The transmission of geminiviruses by biotypes of *Bemisia tabaci*. Chapter 5 In: **BEMISIA 1995: Taxonomy, biology, damage, control and management**. D. Gerling and R.T. Mayr, eds. Andover, England: Intercept Ltd. Publ.

Rosell, R.C., I.D. Bedford, P.G. Markham, **D.R. Frohlich**, and J.K. Brown. **1995**. Morphological variation in *Bemisia* populations. Chapter 12 In: **BEMISIA 1995: Taxonomy, biology, damage, control and management**. D. Gerling and R.T. Mayr, eds. Andover, England: Intercept Ltd. Publ.

#### **POPULAR LITERATURE**

Nyman, F. 2001. From Horsepower to Rocket Power: 50 years of Engineering in Alaska. D. Fradley and **D.R. Frohlich**, Eds. Anchorage Alaska: F & M Publishing, 397 pp.

#### **PUBLISHED PROCEEDINGS**

**Frohlich, D.R.**, J.K. Brown, I.D. Bedford, P.G. Markham. **1994**. Mitochondrial 16S ribosomal subunit as a molecular marker in *Bemisia tabaci* and implications for population variability. **Phytoparasitica** 22: 311.

Brown, J.K., S.D. Wyatt, and **D.R. Frohlich**. **1994**. The capsid protein - A determinant of host plant affiliations of whitefly-transmitted geminiviruses? **Phytoparasitica** 22: 325.

Rosell, R.C., I.D. Bedford, P.G. Markham, **D.R. Frohlich**, and J.K. Brown. **1994**. Morphological variation in *Bemisia* populations. **Phytoparasitica** 22: 312.

Wang, X-Y., **D.R. Frohlich**, M.A. Wells. **1991**. Storage protein gene evolution. **Sericologia** 31: 14.

#### **PUBLISHED ABSTRACTS**

DeBarro, P.J., J.W. Trueman, **D.R. Frohlich**. 2003. Molecular phylogeography and evolution: A global assessment of *Bemisia tabaci* populations. Abstracts of the 3<sup>rd</sup> International *Bemisia* Workshop 2003. Institut de Recerca I Tecnologia Agroalimentaries, Barcelona, Spain. p. 16.

R. C. Rosell, J. Sutherland, T. Pham and **D. R. Frohlich**. 2003. Cysteine Proteases in the whitefly, *Bemisia tabaci* (B biotype). Abstracts of the 3<sup>rd</sup> International *Bemisia* Workshop 2003. Institut de Recerca I Tecnologia Agroalimentaries, Barcelona, Spain. p. 25.

Pham, T., **D. R. Frohlich**, and R. C. Rosell. 2000. Identification of proteolytic activity in *Bemisia tabaci* Btype (Homoptera: Aleyrodidae). Abstracts of the International Congress of Entomology, Londrina: Embrapa Soja, 2000, Vol. 1, p. 80.



**Frohlich, D.R.** and J.K. Brown. 1995. Mitochondrial 16S ribosomal subunit as a molecular marker in Bemisia species. Abstracts of the 3rd Annual Review of the 5-Year National Research and Action Plan for Sweetpotato Whitefly Research. USDA.

Rosell, R.C., I.D. Bedford, P.G. Markham, **D.R. Frohlich** and J.K. Brown. 1995. Morphological variation in the fourth instar of Bemisia populations. Abstracts of the 3rd Annual Review of the 5-Year National Research and Action Plan for Sweetpotato Whitefly Research. USDA.

**Frohlich, D.R.** 1994. Development of molecular markers to facilitate population characterization of the whitefly, Bemisia tabaci. Abstracts of the 2nd Annual Review of the 5-Year National Research and Action Plan for Sweetpotato Whitefly Research. USDA.

Coats, S.A., **D.R. Frohlich**, T.J. Henneberry and J.K. Brown. 1994. The kinetics and inhibition of whitefly acetylcholinesterases and host plant influences on the kinetic parameters of acetylcholinesterase activity in the 'A' and 'B' biotypes. Abstracts of the 2nd Annual Review of the 5-Year National Research and Action Plan for Sweetpotato Whitefly Research. USDA.

**Frohlich, D.R.** and M.A. Wells. 1990. An amphipathic peptide as a potential new insecticide. In: Hagedorn, H.H., J.G. Hildebrand, M.G. Kidwell, J.H. Law. Molecular Insect Science. New York: Plenum, p 303.

**Frohlich, D.R.** and V.J. Tepedino. 1985. Sex ratio, parental investment, and interparent variability in nesting success in a solitary bee. Abstracts of the 11<sup>th</sup> Annual Meeting of the Guild of Rocky Mountain Population Biologists.

#### **INVITED LECTURES, SEMINARS, WORKSHOPS, POSTERS (students underlined)**

**Frohlich, D.R.**, and C.M. Gomez Rincon. **2017.** Rediscovering the Sacred in Nature. De Smet – De Marneffe Memorial National Conference. **Raimon Panikkar and the Cosmotheandric Vision. Pune, India, 8-9 December.**

Perli Noguera, E. and **D.R. Frohlich.** **2017.** Engaging the Religion-Science Dialog: Formation of the "Whole" Student in an Undergraduate Liberal Arts University". **IX Latin American Congress of Science and Religion. Universidad Popular Autónoma del Estado de Puebla. Puebla Mexico, 9-10 February.**

**Frohlich, D.R.** **2017.** The Unity of the Living Being and the Essence of Not-Two: Relationality, Boundary Conditions and Symmetry Breaks. **La Unidad del Viviente Desde Enfoque Interdisciplinar, A Partir de La Filosofia y Las Ciencias Biologicas. Universidad Popular Autónoma del Estado de Puebla. Puebla Mexico, 2-3 February.**

**Frohlich, D.R.** **2016.** Evolutionary Biology, Neo Darwinism, And the Roman Catholic Tradition, **Universidad de Santo Tomas, Santiago Chile, 9 May.**

**Frohlich, D.R. 2016.** Life and Art? Les fractales, l'art, la biologie et la nature de l'infini dans la creation (Fractals, Art, Biology and the Nature of Infinity in Creation), **ICES - Institut Catholique d'Études Supérieures, La Roche-Sur-Yon, France 21 April.**

**Frohlich, D.R. 2016.** Catholic Thought and the Theory of Evolution by Natural Selection. Faith and Fact: Why Science is Compatible with Religion, A Symposium on Faith and Science. Civil Law School, University de Santo Tomas. **Manila, Philippines, 22 February.**

**Frohlich, D.R. 2015.** Current Opinion in Human Evolution. **San Carlos and San Ambrosio Seminary, Havana, Cuba. 15 July.**

**Frohlich, D.R. 2015.** Recent Advances in the Human Genome Project. **San Carlos and San Ambrosio Seminary, Havana, Cuba. 15 July.**

**Frohlich, D.R. 2015.** Science and Religion in the Catholic Tradition. 2015 International Conference "Science and Religion: Past and Future", **Hanshin University, Seoul, South Korea, 29 April.**

**Frohlich, D.R. 2015.** The Oneness of Nature: Catholic Thinking and the North American Bishop's Letters. Master's Conference Series in Science and Faith. **Ateneo Pontificio Regina Apostolorum, Rome, Italy. 6 March.**

**Frohlich, D.R. 2015.** Evolutionary Theory - Or Why the Central Theory of Modern Biology is God's Gift to Religion. Master's Conference Series in Science and Faith. **Ateneo Pontificio Regina Apostolorum, Rome, Italy. 5 March.**

**Frohlich, D.R. 2014.** "Spirituality and Science: Toward Unity and Complement" (Spiritualité et Science : vers unité et complémentarité). **ICES - Institut Catholique d'Études Supérieures, La Roche-Sur-Yon, France. 22 September.**

Srinivas, R., P.J. Miller, **D.R. Frohlich.** **2004.** A Deo, Propter Deum, Secundum Deum: An Integrative Model for Environmental Ethics Based In Catholic Theology. Faith, Ethics, and Environment: The Response of a Catholic University. **University of Notre Dame, November 7-9, South Bend, IN.**

J. L. Sutherland, T. Pham, **D. R. Frohlich** & R. C. Rosell. **2002.** Identification of possible digestive enzymes in the whitefly, *Bemisia tabaci* (B type). **Council on Undergraduate Research Posters on the Hill, Washington, DC. April 18 (Invited Poster).**

**Frohlich, D.R., R.C. Rosell, R.A. Bagnall. 1997.** Mysid shrimp: A model for research-based laboratories in introductory biology. **Council on Undergraduate Research - Research Link 2000 Conference, Whitewater, WI, November.**

**Frohlich, D.R. 1993.** Molecular approaches to detecting polymorphisms among host-associated whitefly populations. Symposium on Application of Quantitative and Molecular Techniques to Epidemiology, **Entomological Society of America, Indianapolis IN, December.**

**Frohlich, D.R.** and R. Caballeros. **1993.** Workshop: Detection of whitefly biotypes by polyacrylamide gel electrophoresis. Workshop Coordinator. **Zamorano Department of Crop Protection**, Escuela Agricola PanAmericana, Zamorano-Tegucigalpa, Honduras.

Brown, J.K., R. Lastra, **D.R. Frohlich.** **1993.** Workshop: Detection of whitefly-transmitted geminiviruses by DNA-DNA hybridization assays. **(CATIE) Centro Agronomico Tropical de Investigacion y Ensenanza**, Turrialba, Costa Rica.

**Frohlich, D.R. 1992.** The animal mitochondrial genome: Characteristics, evolution, and uses in population biology. Department of Animal Biology, **University of Pavia, Pavia, Italy.**

#### **INVITED COURSES (TEACHING/LECTURE)**

**Notre Dame Seminary, New Orleans LA**, with Chris Baglow (Theology)

The Emergence of the Image: Human Evolution from Biological, Philosophical and Theological Perspectives, **Spring Semester 2017** (4 lectures)

**St. Joseph Seminary College, St. Benedict LA**, with Corey Hayes (Philosophy), Chris Baglow (Theology)  
PHI 3333: Integral Anthropology: Evolution in Dialogue with Catholic Theology and Philosophy, **Fall Semester 2016** (5 lectures)

**SEMINARS AND PRESENTATIONS (students underlined)**

Choate, R.A. and **D.R. Frohlich**. 2016. Between Scylla and Charybdis: A Dynamic of Consciousness. **The Science of Consciousness Conference. Tucson AZ, April.**

Choate, R.A. and **D.R. Frohlich**. 2016. Are Viruses Alive? **Gordon Research Conference: Origins of Life. Galveston TX, January.**

Choate, R.A. and **D.R. Frohlich**. 2015. Between Scylla and Charybdis: A Dynamic of Consciousness. **VII International Symposium on Brain Death and Disorders of Consciousness. Havana, Cuba, 8-11 December.**

**Frohlich, D. R.** and Choate, R.A. 2015. Evolution, Convergence, and Constraint: An Arboreal Emergence of Consciousness. **VII International Symposium on Brain Death and Disorders of Consciousness. Havana, Cuba, 8-11 December.**

Choate, R.A. and **D.R. Frohlich**. 2015. From Physicosemiosis to Biosemiosis: Models of Viral Evolution as Bridge. **Gatherings in Biosemiotics 2015. Aalborg University Copenhagen 30/6 – 4/7**

**Frohlich, D.R.** 2014. Problems in Natural Selection and Adaptation: A Semiotic Lens. **12th World Congress of Semiotics, Sofia Bulgaria, 19 September.**

Elgin, S.C.R. (70 co-authors incl. **D.R. Frohlich**). 2010. The Genomics Education Partnership. 2010. **HHMI Professors and Program Directors Meeting, Chevy Chase MD.**

Brown, Sidney; Andrade, Dena; Uribe, Gabriela; McCleskey, Stela; Ticas, Dacia; Jenine Zaibaq; Griffin, Richard; Sen, Partha; Jain, Renu; Simmons, Alexandra; Frohlich, Donald; Rosell, Rose Marie; McWhinney, Dalton and Larios, Maia. 2010. Isolation and Characterization of Bacterial Phage: A Metagenomics Study of Phage populations from Texas Gulf Coast Region. **ASM Regional Meeting. Texas State University, San Marcos, October.**

HM Chung, **Donald R. Frohlich**, Jeff Thompson, Mary Shaw, W Leung, C Shaffer<sup>5</sup>, D Lopatto, SCR Elgin. 2010. The Genomics Education Partnership: Bringing Genomics into the Undergraduate Curriculum in Diverse Settings. 2010. **RECOMB Satellite Conference on Bioinformatics Education. San Diego, June.**

Brown, Sidney; Andrade, Dena; Uribe, Gabriela; McCleskey, Stela; Ticas, Dacia; Griffin, Richard; Sen, Partha; Jain, Renu; Simmons, Alexandra; Frohlich, Donald; Rosell, Rosie; McWhinney, Dalton, and Larios, Maia. 2010. Isolation and Characterization of Bacteriophage Metagenomes from the Texas Gulf Coast Region. **CCRAA Symposium for Summer Stem Students. Houston. August.**

Operon Architecture Database: Overview. 2010. Saba Ghaziyani, Lukas Simon, Lidia Turrubiartes, Donald R. Frohlich, John Starner, Maia Larios-Sanz. **UST Undergraduate Research Day. Houston, TX. April.**

Operon Architecture Data Base: Data Mining. 2010. Lukas Simon, Saba Ghaziyani, Lidia Turrubiartes, Donald R. Frohlich, Maia Larios-Sanz and John Starner. **UST Undergraduate Research Day. Houston, TX. April.**

Operon Architecture Database: Entity-Relationship Modeling. **2010.** Lidia Turrubiartes, Saba Ghaziyani, Lukas Simon, Donald R. Frohlich, Maia Larios-Sanz, John Starner. **UST Undergraduate Research Day.** Houston, TX. April.

Colvin, Patrick, Donald R. Frohlich. **2010.** Modularity in Evolutionary Development. **UST Undergraduate Research Day.** Houston, TX. April.

**Frohlich, DR.,** RA Bagnall, J Starner, R Rosell, JY Flores, M Larios-Sans. **2009.** Formation and implementation of a bioinformatics major at a small liberal arts university. **San Diego RECOMB Satellite Conference of Bioinformatics Education**, San Diego, March.

DeBarro, P., R. Rosell, H. Costa, L Boykin, **D.R. Frohlich.** **2008.** A Molecular phylogeny of Indo-Australian Aleyrodidae. **International Conference of Entomology**, Durban, South Africa, August.

Boykin, Laura M., Robert G. Shatters, Jr., Rosemarie C. Rosell, Cindy L. McKenzie, Ruth Ann Bagnall, Paul De Barro, and **Donald R. Frohlich.** **2007.** Global relationships of *Bemisia tabaci* (Hemiptera: Aleyrodidae) revealed using Bayesian analysis of mitochondrial COI DNA sequence. **Evolution 2007**, Christchurch New Zealand, June.

Rosell, R.C., **D.R. Frohlich**, H. Costa, M. Coombs and P.J. DeBarro. **2006.** The inside story: Bacteriocyte-associated endosymbionts of whiteflies. **4<sup>th</sup> International Bemisia and Whitefly Genomics Workshop.** Duck Key FL, December.

DeBarro, P.J., M. Coombs, R. Rosell, H. Costa, and **D.R. Frohlich.** **2006.** A Molecular Phylogeny of Indo-Australian Aleyrodidae. **4<sup>th</sup> International Bemisia and Whitefly Genomics Workshop.** Duck Key FL, December.

Boykin, L.M., R.G. Shatters Jr., R.C. Rosell, C.L. McKenzie R.A. Bagnall, and **D.R. Frohlich.** **2006.** Out of Africa: Diversity and Host Plant Utilization in Sub-Saharan *Bemisia tabaci*. **4<sup>th</sup> International Bemisia and Whitefly Genomics Workshop.** Duck Key FL, December.

Boykin, L.M., R.G. Shatters Jr., R.C. Rosell, C.L. McKenzie R.A. Bagnall, and **D.R. Frohlich.** **2006.** Global Relationships of *Bemisia tabaci* (Hemiptera: Aleyrodidae) revealed using Bayesian Analysis of mitochondrial COI DNA sequence. **4<sup>th</sup> International Bemisia and Whitefly Genomics Workshop.** Duck Key FL, December.

Shatters Jr., R.G., L.M. Boykin, R.A. Bagnall, R.C. Rosell, **D.R. Frohlich** and C.L. McKenzie. **2006.** Population genetics of *Bemisia tabaci* biotypes B and Q from the Mediterranean and the U.S. inferred using microsatellite markers. **4<sup>th</sup> International Bemisia and Whitefly Genomics Workshop.** Duck Key FL, December.

Boykin, L.M., **D.R. Frohlich**, R.G. Shatters Jr., R.C. Rosell, C.L. McKenzie, R.A. Bagnall. **2006.** Bayesian analysis of COI DNA reveals the silverleaf whitefly, *Bemisia tabaci* (Hemiptera: Aleyrodidae), is a well-supported species complex. **Evolution 2006**, SUNY Stony Brook, June.

D'Souza, J., T. Nguyen, N. Jabbour, D.R. Frohlich, J. G. Romagni and T. B. Malloy. **2006.** Mass spectrometry characterization and bioactivity of leaf extracts from *Ligustrum spp.* **American Chemical Society**, Atlanta GA, March.

Shatters Jr., R.G., L. M. Boykin, R. A. Bagnall , R. C. Rosell , C. L. McKenzie and **D. R. Frohlich. 2006.** A Comparison of Bayesian and Maximum Likelihood Analysis: Phylogenetic Relationships in a Subtropical Insect Pest. **Houston Society for Engineering in Medicine and Biology, 23rd Annual Houston Conference on Biomedical Engineering Research**, Houston TX, 9-10 February.

Shatters Jr., R.G., L.M. Boykin, RA Bagnall, R.C. Rosell, and C.L. McKenzie, **D.R. Frohlich. 2006.** Phylogenetic relationship of *Bemisia tabaci* determined by Bayesian analysis of COI sequence variation. **Plant and Animal Genome XIV Conference**, San Diego, January.

Bagnall, R.A., R.C. Rosell, L. Boykin, P. Dang, C. McKenzie, **D.R. Frohlich**, R.G. Shatters Jr. **2006.** Development of microsatellite markers in an estuarine opossum shrimp, *Americamysis bahia* (Crustacea: Mysida). **Plant and Animal Genome XIV Conference**, San Diego, January.

Christine M. Konecny, Yesenia Rojas, Heather S. Costa, **Donald R. Frohlich**, Paul De Barro and Rosemarie C. Rosell. Phylogenetic analysis of bacterial primary endosymbionts found in whitefly species from various global locations. **Tri Beta Biological Honor Society, Regional Meeting**, Lake Texahoma, TX, April 1-3, **2005.**

Eddie J. Espineli, Landon Hatfield, **Donald R. Frohlich**, and Rosemarie C. Rosell. Characterization of *Bemisia tabaci* B biotype Protease using SDS Polyacrylamide Gel Electrophoresis (PAGE). **Tri Beta Biological Honor Society, Regional Meeting**, Lake Texahoma, TX, April 1-3, **2005 (Winner Second Place - Best Student Poster Award)**

Espineli, E., L. Hatfield, **D.R. Frohlich** and R.C. Rosell. 2004. Genetic and protein characterization of protease activity in the whitefly, *Bemisia tabaci* (B biotype). **Entomological Society of America**, Salt Lake City, UT, November.

Konecny, C.M., Y. Rojas, H. S. Costa, **D. R. Frohlich**, M. T. Coombs, P. De Barro and R. C. Rosell. **2004.** Phylogenetic analysis of primary endosymbionts associated with diverse whitefly species. **Entomological Society of America**, Salt Lake City, UT, November.

Rosell, R.C., H. S. Costa, M. T. Coombs, **D.R. Frohlich** and P. De Barro. **2004.** Phylogenetic characterization of primary symbionts associated with diverse whitefly species. **International Congress of Entomology Brisbane, Australia.** August.

Espinelli, E., R.C. Rosell, **D.R. Frohlich. 2004.** An experimental rationale for identifying a *Bemisia tabaci* B biotype whitefly cathepsin B protease nucleotide sequence. **Beta Beta Beta National Biology Honor Society Convention.** Mesa State University, Grand Junction CO, 26-30 May.

DeBarro, P.J., J.W. Trueman, **D.R. Frohlich. 2003.** Molecular phylogeography and evolution: A global assessment of *Bemisia tabaci* populations. **Third International Bemisia Workshop.** Barcelona, Spain, 17-20 March.

Rosell R.C., J.L. Sutherland, T. Pham, E. Espinelli, L. Hatfield and **D.R. Frohlich. 2003.** Cysteine proteases in the whitefly, *Bemisia tabaci* (B-type). **Third International Bemisia Workshop.** Barcelona, Spain, 17-20 March.

**Frohlich, D.R.**, F.D. Parker, T.L. Griswold. **2002**. A phylogenetic analysis of the parasitic bee genus *Stelis* in North America (Hymenoptera: Megachilidae). **Entomological Society of America**, Ft. Lauderdale, FL, 10-13 November.

Sutherland, J.L., T. Pham, E. Espinelli, L. Hatfield, **D.R. Frohlich**, R.C. Rosell. **2002**. Identification of possible digestive proteases in the silver-leaf whitefly *Bemisia tabaci* (B-type). **Entomological Society of America**, Ft. Lauderdale, FL, 10-13 November.

Sutherland, J.L., T. Pham, R.C. Rosell, **D.R. Frohlich**. **2001**. Determination of cathepsin B-like proteases in *Bemisia tabaci* (B-type). Entomological Society of America, San Diego, CA, 9-13 December.

Bagnall, RA and **DR Frohlich**. **2001**. Nucleotide sequence and inferred secondary structure of internal transcribed spacer I (rDNA) of *Americamysis bahia* (Molenock 1969) (Mysida: Mysidae). **Fifth International Crustacean Congress**, Melbourne Australia, 9-13 July.

Bourtzis, K., GK Banks, ID Bedford, PG Markham, **DR Frohlich**, F Beitia. **2001**. Wolbachia infections in whiteflies. **European Whitefly Symposium**, Ragusa, Sicily, Italy. 27 February - 3 March.

Pham, T., **DR Frohlich**, RC Rosell. **2000**. Acidic proteinases in *Bemisia tabaci* (B type). **Entomological Society of America**, Montreal, Canada. 3-7 December.

Pham, T., **DR Frohlich**, RC Rosell. **2000**. Identification of proteolytic activity in *Bemisia tabaci* B type (Homoptera: Aleyrodidae). **XXI International Congress of Entomology**. Foz do Iguassu, Brazil, August.

Banks GK, Farquhar J, **Frohlich DR**, Bedford ID, Markham, PG. **2000**. Molecular phylogeny of *Bemisia tabaci* (*Gennadius*) (Homoptera: Aleyrodidae) using a mitochondrial marker, the 16s ribosomal subunit gene. **XXI International Congress of Entomology**. Foz do Iguassu, Brazil, August.

Banks, G.K., A. Nirgianaki, **D.R. Frohlich**, Z. Veneti, H.R. Braig, T.A. Miller, I.D. Bedford, P.G. Markham, C. Savakis, K. Bourtzis. **2000**. Wolbachia is absent from aphids but present in whiteflies: Evidence for predator-prey horizontal transmission. **Wolbachia 2000 Conference**: Kolymbari, Crete, Greece, 7-9 June.

Keller, T.L., D.B. Muir, D.R. Frohlich. **1999**. Sequence and secondary structure of rDNA internal transcribed spacers 1 and 2 (ITS1 and ITS2) in the rice hoja blanca vector, *Tagosodes orizicolus* (Muir). **Entomological Society of America**, Atlanta GA, 12-16 December.

Buhay, C.J., T.L. Keller, H. Charrel, G.K. Banks, P. Markham, L. Calvert, R. Rosell, **D.R. Frohlich**. **1998**. Comparison of mitochondrial cytochrome oxidase I sequences in insect vectors of rice viral diseases. **Entomological Society of America**, Las Vegas NV, 8-12 November.

**Frohlich, D.R.**, I. Torres-Perez, I Bedford, P.G. Markham, J. K. Brown. **1998**. Mitochondrial DNA markers and the population biology of *Bemisia tabaci*. **Second International Workshop on Bemisia and Geminiviral Diseases**. San Juan, Puerto Rico, June.

Banks GK, Farquhar J, **Frohlich DR**, Markham PG. **1998**. Use of the mitochondrial 16S ribosomal subunit gene as a marker for whitefly species. **Second International Workshop on Bemisia and Geminiviral Diseases**. San Juan, Puerto Rico, June.

Banks GK, Buhay C, **Frohlich DR**, Markham PG. **1998**. Use of Cytochrome Oxidase II as a First Molecular Phylogenetic Marker for the Insect pest and Virus Vector *Cicadulina* spp. **Second International Workshop on Bemisia and Geminiviral Diseases**. San Juan, Puerto Rico, June.

Banks, G.K., C. Buhay, P. J. Markham, and **D.R. Frohlich**. **1998**. Molecular markers as tools for population analysis of plant virus vectors in Africa and Southeast Asia. **Texas Academy of Sciences**. Tyler, TX, March.

Artigas, A., J. Keck, S. Reyna, R.A. Bagnall, and **D.R. Frohlich**. **1998**. PCR based mitochondrial and nuclear DNA markers in the Mediterranean fruitfly, *Ceratitis capitata*. **Texas Academy of Sciences**. Tyler, TX, March.

Bagnall, R.A., S. Shah, B. Kenjura, J. Keck, and **D.R. Frohlich**. **1998**. Cytochrome c oxidase I and other mitochondrial DNA markers in estuarine mysid shrimp (*Mysidopsis*). **Texas Academy of Sciences**. Tyler TX, March.

Reyna, S.V., R.A. Bagnall, S. Colon, A.R. Malacrida, G. Gasperi, and **D.R. Frohlich**. **1996**. Development of PCR based mitochondrial DNA markers in the Mediterranean fruit fly, *Ceratitis capitata*. **Texas Academy of Sciences**. Galveston TX. 29 Feb.- 2 Mar.

Bagnall, R.A. and **D.R. Frohlich**. **1996** Mitochondrial DNA markers and a proposed investigation of estuarine mysid shrimp (*Mysidopsis* spp.) population structure. **Texas Academy of Sciences**. Galveston TX. 29 Feb.- 2 Mar.

**Frohlich, D.R.**, and J.K. Brown. **1995**. Mitochondrial 16S ribosomal subunit as a molecular marker in *Bemisia tabaci* and implications for population variability. **Symposium on Biology and Molecular Epidemiology of Geminiviruses**. Tucson AZ. 3-8 June.

Rosell, R.C., I.D. Bedford, P.G. Markham, **D.R. Frohlich**, and J.K. Brown. **1995**. Morphological variation in fourth-instar larvae (pupae) of *Bemisia* populations. **Symposium on Biology and Molecular Epidemiology of Geminiviruses**. Tucson AZ. 3-8 June.

Rosell, R.C., I.D. Bedford, P.G. Markham, **D.R. Frohlich**, and J.K. Brown. **1995**. Morphological variability in the fourth instar of whitefly populations in the genus *Bemisia*. **Annual Meeting of the Arizona Imaging and Microanalysis Society**. Tucson AZ. 15-19 May.

**Frohlich, D.R.** and J.K. Brown. **1994**. Relationships among geographic populations of *Bemisia tabaci* as inferred by mitochondrial 16S ribosomal sequences. **Entomological Society of America**, Dallas TX. 12-17 December.

Rosell, R.C., I.D. Bedford, P.G. Markham, **D.R. Frohlich**, and J.K. Brown. **1994**. Morphological variation in fourth-instar larvae (pupae) of *Bemisia* populations. **Entomological Society of America**, Dallas TX. 12-17 December.



**Frohlich, D.R.** and J.K. Brown. **1994.** Mitochondrial 16S ribosomal subunit as a molecular marker in *Bemisia tabaci* and implications for population variability. **BARD Sponsored International Workshop on Bemisia tabaci.** Shoshon, Israel. 3-7 October.

Brown, J.K., S.D. Wyatt, and **D.R. Frohlich.** **1994.** The capsid protein - A determinant of host plant affiliations of whitefly-transmitted geminiviruses? **BARD Sponsored International Workshop on Bemisia tabaci.** Shoshon, Israel. 3-7 October.

Rosell, R.C., I.D. Bedford, P.G. Markham, **D.R. Frohlich,** and J.K. Brown. 1994. Morphological variation in *Bemisia* populations. **BARD Sponsored International Workshop on Bemisia tabaci.** Shoshon, Israel. 3-7 October.

Brown, J.K., S.D. Wyatt, and **D.R. Frohlich.** **1994.** Gene for the coat protein of whitefly-transmitted geminiviruses: Preliminary phylogenetic analyses. **American Phytopathological Society.** Albuquerque, New Mexico. 9-August.

Brown, J.K., S.D. Wyatt, and **D.R. Frohlich.** **1994.** The coat protein gene of the whitefly-transmitted geminiviruses as a biological and evolutionary determinant. **13 Annual Meeting of the American Society for Virology.** University of Wisconsin, Madison. 9-July.

**Frohlich, D.R.** **1993.** The great whitefly species hoax. **Plant - Insect Interaction Group,** University of Arizona, Tucson, December.

Stevenson, B., **D.R. Frohlich,** A.M. Peterson, M.A. Wells. **1993.** Cloning and sequencing of a mitochondrial cytochrome c oxidase c-DNA from the tobacco hornworm, *Manduca sexta*. **Second International Symposium on Molecular Insect Science,** Flagstaff AZ, July.

Rosell, R., **D.R. Frohlich,** J.K. Brown. **1993.** Geminivirus transmission/acquisition by the whitefly, *Bemisia tabaci*. **Second International Symposium on Molecular Insect Science,** Flagstaff AZ, July.

Robinson, A.S., L. Baruffi, A.R. Malacrida, **D.R. Frohlich,** A. Ursini, C. Bandi, G. Damiani, G. Gasperi, M.A. Wells. **1993.** New tools for population analysis of the medfly *Ceratitis capitata*: Mitochondrial DNA sequence analysis and RAPD patterns. **Second International Symposium on Molecular Insect Science,** Flagstaff AZ, July.

**Frohlich, D.R.,** A.S. Robinson, M.A. Wells. **1992.** Mitochondrial DNA analysis in the medfly, *Ceratitis capitata*. **MacArthur Foundation Vector Biology Network Scientific Institute,** Santa Cruz, CA.

**Frohlich, D.R.** and M.A. Wells. **1991.** Codon usage in hemolymph proteins among Lepidoptera. **2nd International Workshop on the Molecular Biology and Molecular Genetics of Lepidoptera,** Kolymbari, Crete, Greece.

Wang, X-Y., **D.R. Frohlich,** M.A. Wells. **1991.** cDNA and deduced amino acid sequence of the methionine-rich storage protein from *Manduca sexta*: Implications for storage protein gene evolution. **2nd International Workshop on the Molecular Biology and Molecular Genetics of Lepidoptera,** Kolymbari, Crete, Greece.

**Frohlich, D.R.** and M.A. Wells. **1989.** An amphipathic peptide as a potential new insecticide. **First International Symposium on Molecular Insect Science**, Tucson AZ, October.

**Frohlich, D.R.**, W.A. Brindley, T.E. Burris. **1987.** Multiple esterases in a solitary bee: *Megachile rotundata*. **Entomological Society of America**, Boston, MA.

**Frohlich, D.R.** **1986.** Effect of nest tunnel density on nesting parameters in a solitary bee: *Megachile rotundata*. **Entomological Society of America**, Reno, NV.

**Frohlich, D.R.** **1985.** Sex ratio, parental investment, and interparent variability in nesting success in a solitary bee. **Entomological Society of America**, Hollywood, FL.

Brindley, W.A., N. Hama, S. Hawkins, **D.R. Frohlich**. **1984.** Biological assay in monitoring and detecting pesticide resistance. **Entomological Society of America**, Salt Lake City, UT.

#### **UNDERGRADUATE RESEARCH PROJECTS (not published)**

**Saba Ghaziyani, Lukas Simon, Lidia Turrubiarres, Donald R. Frohlich, John Starner, Maia Larios-Sanz.** 2010. Operon architecture data base. IRACDA: Baylor College of Medicine, Houston. May.

**Lidia Turrubiarres, Saba Ghaziyani, Lukas Simon, Donald R. Frohlich, Maia Larios-Sanz, John Starner.** 2010. Operon architecture data base: The entity relationship. IRACDA: Baylor College of Medicine, Houston. May.

**Lukas Simon, Saba Ghaziyani, Lidia Turrubiarres, Donald R. Frohlich, Maia Larios-Sanz and John Starner.** 2010. Operon architecture data base: Data mining. IRACDA: Baylor College of Medicine, Houston. May.

**Flores, JY, S Ghaziyani, R Rosell, D Torres, L Turrubiarres, DR Frohlich.** 2009. The wonders of annotation: Comparative genomics and bioinformatics. UST URC Day

**Olowu, A., G. Abraham, K. Eaves, N. Tahvilian.** 2007. UST's gateway to bioinformatics – developing a local web resource. UST Undergraduate Research Day Presentation. (w/ J. Starner)

**Olowu, A.** 2006-07. *Bacillus pumilis* SAFER 32 genome annotation and conservation of sporulation gene clusters in *Bacillus*. UST Undergraduate Research Day Presentation. (w/ G. Fox, U. Houston)

**Holliday, M., A. Rossi.** 2005-06. Mitochondrial DNA markers and *Americamysis bahia*. (w/ RA Bagnall)

**D'Souza, J., T. Nguyen, N. Jabbour.** 2005-06. Mass spectrometry characterization and bioactivity of leaf extracts from *Ligustrum spp.* (w/ JG Romagni, T Malloy)

**Coursey, J.** 2004-05. Molecular population genetics of *Mysidopsis bahia* along the Texas coast. UST Undergraduate Research Day Presentation. (w/ RA Bagnall)

**Phuoc, V.** 2004. Successive approximation character weighting and phylogenetic relationships in the genus *Stelis*.

**Espineli, E.** 2004. An experimental rationale for identifying a *Bemisia tabaci* B biotype whitefly cathepsin B protease nucleotide sequence. UST Undergraduate Research Day Presentation. (w/ R Rosell)

**Hatfield, L. 2004.** Optimization of *Bemisia tabaci* protease inhibition assay. UST Undergraduate Research Day Presentation. (w/ R Rosell)

**Loyal, L. 2003.** An evolutionary perspective on God. UST Undergraduate Research Day Presentation.

**Duhon, K., V. Phuoc, C. Adkins. 2003.** A map of the mitochondrial genome of the alfalfa leafcutting bee, *Megachile rotundata*.

**Ritter, D. 2002.** Development of RAPD markers in a 'rear and release' biocontrol parasite, *Psix tunetanus*. UST Undergraduate Research Day Presentation.

**Mascolo, M. 2001.** Use of RAPD primers to differentiate medfly (*Ceratitis* spp.) populations. UST Undergraduate Research Day Presentation.

**Frost, M. 2001.** Characterization of vitellogenin proteins in *Mysidopsis bahia*. UST Undergraduate Research Day Presentation. (w/ RA Bagnall)

**Al-Fadel, L. 2001.** Nucleotide sequence and comparison of introns for elongation factor (EF1 $\alpha$ ) in two species of plant hoppers. UST Undergraduate Research Day Presentation.

**Serrato, J. 2000.** Wolbachia and insect vectors of plant viruses. UST Undergraduate Research Day Presentation.

**Garcia, A. 2000.** Cladistics and a parsimony analysis of higher ordered taxa among the Hymenoptera. UST Undergraduate Research Day Presentation.

**Pham, T. 2000.** Characterization of acidic proteinases in *Bemisia tabaci* (B biotype). UST Undergraduate Research Day Presentation. (w/ R Rosell)

**Vo, A. 1999.** Study of serine proteases from various arthropod species. UST Undergraduate Research Day Presentation.

**Tran, Le-Minh D. 1999.** Computer analysis of trypsin-like and chymotrypsin-like DNA sequences. UST Undergraduate Research Day Presentation.

**Massey, E.A. 1999.** Insect chitinases: literature review and analysis of genome structure. UST Undergraduate Research Day Presentation.

**Keller, T.L. 1999.** Targeting mitochondrial cytochrome oxidase I (COI) as a marker for reconstructing the phylogeny of three populations (Bali, Thailand, Nepal) of the rice tungro vector *Nephotettix virescens* (Distant) (Homoptera: Cicadellidae). UST Undergraduate Research Day Presentation. (w/ RA Bagnall)

**Buhay, C.J. 1999.** Comparison of mitochondrial cytochrome oxidase I sequences in select tropical and subtropical Auchenorrhynchous vectors of plant viruses. Undergraduate Research Day Presentation. (w/ RA Bagnall)

**Nero, A. 1998.** A study of alternative exon splicing elements. UST Undergraduate Research Day Presentation.

**Greene, I. 1998.** Molecular genetic markers: Negative results are results too. UST Undergraduate Research Day Presentation.

**Brandon Cook. 1998.** The apyrase gene in tick salivary glands.

**Artigas, A., J. Keck, S. Reyna. 1997.** PCR based mitochondrial and nuclear DNA markers in the Mediterranean fruitfly, *Ceratitis capitata*. (w/ RA Bagnall)

**Shah, S., B. Kenjura, J. Keck. 1997.** Cytochrome c oxidase I and other mitochondrial DNA markers in estuarine mysid shrimp (*Mysidopsis*). (w/ RA Bagnall)

**Reyna, S.V. 1996.** Development of PCR based mitochondrial DNA markers in the Mediterranean fruitfly, *Ceratitis capitata*.

#### **SENIOR/HONORS THESES: BIOLOGY**

**Patrick Colvin. Don Frohlich. 2010.** Modularity in Evolutionary Development. Honors Thesis. May.

**Contreras, S. 2002.** Horizontal gene transfer.

**Dang, M. 2002.** The role of molecular techniques in conservation biology and biodiversity.

**Keller, T.L. 1999.** Sequence and secondary structure of rDNA internal transcribed spacers 1 and 2 (ITS1 and ITS2) in the rice hoja blanca vector, *Tagosodes orizicolus* (Muir).

**Spelman, B. 1999.** Nucleotide sequence and secondary structure of the internal transcribed spacers of *Peregrinus maidis*.

**GRANTS - Competitive**

- 2015 Baglow, C., ... Frohlich, D.R., (5 authors). 2015. The Emergence of the Image: Human Evolution from Scientific, Philosophical and Theological Perspectives. **Seminaries in Science Program, Cardinal Suenens Center at John Carroll University (Vatican Observatories, John R. Templeton)**. \$20,000.00, 3 yrs.
- 2014 Frohlich, D.R. 2014. Development of an ICUSTA Faith and Science Network. **International Council of Universities of St Thomas Aquinas**, Houston TX. \$5000
- 2005 Frohlich, D.R. 2005. Development of microsatellite DNA markers for *Americamysis bahia*. **UST Faculty Development**. \$3062.00
- 2003 Frohlich, D.R. 2003. Research presentation for the Third International Bemisia Workshop. Barcelona, Spain, 17-20 March. **UST Faculty Development**. \$1390
- 2002 Frohlich 2002. Research presentation for the 5th International Conference of Hymenopterists, Beijing, PR China, **UST Faculty Development**. \$2640
- 2001-2004 Romagni, J.G., D. R. Frohlich, R.C. Rosell. 2001. Acquisition of a preparative ultracentrifuge and tabletop superspeed centrifuge for faculty mentored undergraduate research training in biology. **National Science Foundation - Major Research Instrumentation**. \$92,400.
- 1995-1997 Frohlich, D.R., R.A. Bagnall. 1995. Establishment of a molecular ecology lab in the Biology Department at the University of St. Thomas. **National Science Foundation. Instrumentation and Laboratory Improvement**. \$60,934.
- 1994 Frohlich, D.R., J.K. Brown. Molecular polymorphisms to differentiate whitefly populations. **USDA NRI Competitive**. \$191,588. Approved, not funded.  
Plant-Insect Interaction Panel: 'Biogeographic Analysis of Whitefly Populations'  
**University of Arizona**, Tucson. \$4935.

**GRANTS - Institutional and Private**

- 2003 Equipment and Laboratory Renovation. **John S. Dunn Foundation**, Houston TX, \$550,000
- 2002 General Biology Teaching Lab Equipment. **Vivian L. Smith Foundation**, Houston TX, \$50,000

**AWARDS, HONORS, SCHOLARSHIPS**

- 2006 Edith Stein Excellence in Research Award. University of St. Thomas. Houston, TX
- 2002 Howard Hughes Medical Institute, Cold Spring Harbor Laboratory:  
Bioinformatics for Teaching Faculty, Training Scholarship/Participant. Southwest  
Foundation for Biomedical Research, San Antonio, TX.
- 1995-2001 Cullen Trust / Harry K. and Albert K. Smith Chair in Biology. University of St. Thomas,  
Houston TX
- 1994 Consiglio Nazionale Delle Ricerce (RAISA) Senior Research Fellow. University of Pavia,  
Pavia, Italy.
- 1990 MacArthur Foundation Vector Biology Summer Course Scholarship/Participant
- 1989 Phi Kappa Phi National Honor Society
- 1989-1991 Center for Insect Science, Research Fellowship, Department of Biochemistry,  
University of Arizona, Tucson

## PROFESSIONAL DEVELOPMENT AND TRAINING COURSES

2015. New Challenges in Science and Religion. International Society for Science and Religion (ISSR). Atlanta GA, 20-21, November.

2014. Emergence and Environment: Science and Religion. International Society for Science and Religion (ISSR). New Perspectives in Science and Religion. San Diego CA, 21-22 November.

2013. New Challenges in Science and Religion. International Society for Science and Religion (ISSR). Baltimore MD, 22-23 November.

2010 Genome annotation and finishing. Genomics Education Partnership, Washington University, St. Louis, June.

2009 Genomics and Human Health. UT Health Sciences Center, Houston. May 20-21

2009 RECOMB Satellite Conference on Bioinformatics Education. San Diego, March.

2009 Pacific Symposium on BioComputing: Dynamics of Molecular Networks. Kona HI, 3-7 January.

2009 Pacific Symposium on BioComputing. Comparative Genomics. Kona HI, 3-7 January.

2008 Genome annotation and finishing. Genomics Education Partnership, Washington University, St. Louis, June .

2005 Trade line Conferences: Academic Science Buildings 2005. St. Petersburg Fl., December.

2005 U.S. Department of Education, Partnership for Quality Education: Biology Design Team; Molecular Biology (Biol. 3351). University of Houston, October-July.

2005 NSF Chautauqua Short Course: "Bioinformatics Education Dissemination: Reaching Out, Connecting, Knitting-Together". UT Austin, 23-25 May.

2003 Pacific Symposium on BioComputing. Beyond homology-based methods for the elucidation of function in data-mining. Kaua'i HI, 3-7 January.

2001 Pacific Symposium on BioComputing. Predictive methods using RNA sequences. Kona HI, 3-7 January.

## SERVICE: INVITED PEER REVIEWS

**Journals:** Molecular Ecology, Science, Insect Molecular Biology, Biocontrol, Annals of the Entomological Society of America, Economic Entomology, Journal of Canadian Zoology, Bulletin of Entomological Research, Journal of Applied Entomology, European Journal of Entomology, International Journal of Tropical Insect Science, Journal of the Kansas Entomological Society

**Grant Agencies:** Bill and Melinda Gates Foundation, USDA, National Science Foundation, Council on Undergraduate Research

**PROFESSIONAL SERVICE**

2015. Catholicism and Science. (invited panelist). Religion and Public Life Program (RPLP) at **Rice University** and the Center for Faith and Culture (CFC) at **University of St. Thomas**. 14 April
2014. Pre-publication Book Review Panel (invited participant). Elaine Howard-Ecklund, Christopher P. Scheitle. Matter and Meaning - What Religious People Think About Science. **Rice University**, 25 October.
2014. Pre-publication Grant Results Review Panel (invited auditor). Robert Russell et al. **SATURN: Scientific and Theological Understanding of Randomness in Nature**. **UC Berkeley**, 9-11 October.
- 2007-2009 Advisory Board for **DARWIN2009**, Houston, TX  
2000-2002 American Association of University Professors, Chapter President  
1997-2000 Council on Undergraduate Research. Councilor, Biology.
- 1995 – 1997 Institutional Review Board. Houston Clinical Research Network. Clinical Review Board to Evaluate Study Design for Experimental Treatment of AIDS/HIV+ Patients: Patient Protection. (2 year term) Houston TX
- 1993 - 1994 Tucson AIDS Project. Prevention Services: Substance Abuse and AIDS. Tucson AZ
- 1993 Consultant: Evaluation of study design and techniques for Central American survey of whitefly (*Bemisia tabaci*) biotypes. CHEMONICS Corporation, Miami, FL; Guatemala City, Guatemala.
- 1986 National Review Panel, USDA, Extension Service. National Impact Study of Extension's Integrated Pest Management Programs: Northwest Alfalfa Seed IPM Impact Study



**UNIVERSITY COMMITTEE SERVICE**

Academic Committee

Campus Ministry Council

Campus Master Planning Committee

Capital Campaign Strategy Committee

Catholic Studies Program Committee

Chair's Forum

Computer Network Committee

Course Reduction Committee

Curriculum Committee

Dean's Advisory Council

Faculty Compensation Committee

Faculty Senate

First Year Interdisciplinary Course Committee

Grievance Committee

Health Professions Advisory Committee

Honors Program Committee

Promotion and Tenure Committee

Science and Math Advisory Board

Social Justice Committee

Undergraduate Research Committee

Women Culture and Society Program Advisory  
Board