

THOMAS MATTHEW JOHN DYKSTRA

Dykstra Laboratories, Inc.
3499 NW 97th Blvd.
Suite 6
Gainesville, FL 32606

Lab: (352) 331-7008
Fax: (352) 331-7008
Email: dykstralabs@yahoo.com
Website: www.dykstralabs.com

EDUCATION

- 1997 *Ph.D., Entomology*
University of Florida, Gainesville, Florida
Dissertation: A Behavioral and Perceptual Study of Cat Flea Larvae,
Ctenocephalides felis, and Their Responses to Various Stimuli
- 1994 *M.S., Entomology*
University of Florida, Gainesville, Florida
Thesis: Pheromonotropic Activity in the Abdominal Nerve Cord of the
Tobacco Hornworm, *Manduca sexta*.
- 1990 *B.S., Entomology*
Cornell University, Ithaca, NY
Senior research: Purification of various cytochrome b₅ and P-450 enzymes
in the housefly, *Musca domestica*, utilizing SDS-PAGE.
- 1986 *Regents H.S. Diploma*
James E. Sperry High School, Henrietta, NY

RESEARCH EXPERIENCE

- 1997-present **Laboratory Director-** Dykstra Laboratories, Inc.
Research: Insect Olfaction, Behavioral and Chemical Ecology
Bioelectromagnetics, Antenna Physics, Paramagnetism,
Insect/Plant nutritional physiology
- 1994-1997 **Doctoral Candidate-** University of Florida
Research: Cat flea larva behavior, bioelectromagnetics
- 1990-1994 **Master's Candidate-** University of Florida
Research: Moth neurobiology
- 1990 **Laboratory Technician-** Cornell University
Research: Protein purification using SDS-PAGE
- 1989 **Laboratory Technician-** Cornell University
Research: Host-parasite interactions

TEACHING EXPERIENCE

- 2012 **Lecturer (guest), “The Business of Scientific Patents”**
MAN 4723- Strategic Management
University of Florida
- 2007-present **Lecturer (guest), “Insect Olfaction”**
GMS 6074- Comparative and Evolutionary Neurobiology
University of Florida
- 1999-present **Laboratory Coordinator (guest), Insect Neurobiology**
GMS 6074- Comparative and Evolutionary Neurobiology
University of Florida
- 2002-2006 **Laboratory Coordinator (guest), Insect Behavior**
ENY 3005- Principles of Entomology
University of Florida
- 1999 **Lecturer (guest), “The Nervous System of Insects”**
GMS 6074- Comparative and Evolutionary Neurobiology
University of Florida
- 1992-1993 **Course Instructor**
ENY 3005- Principles of Entomology
University of Florida
- 1991-1992 **Guest Lecturer, “The Nervous System”**
ENY 3005- Principles of Entomology
University of Florida
- 1990-1992 **Laboratory Coordinator,**
ENY 3005- Principles of Entomology
University of Florida
- 1989 **Co-Laboratory Coordinator**
ENTOM 212- Insect Biology
Cornell University

INVITED LECTURES

- 2015 **Electrical Conductivity in Agriculture**
Soil Works Annual Grower’s Workshop, Yankton, SD
- 2015 **Electrical Conductivity in Agriculture**
Brix Chart- generalized markers
Soil Works Annual Growers Meeting, Saskatoon, CAN
- 2015 **What Insects Tell Us About the Health of Our Soils**
Soil Health Symposium, Saint-Hyacinthe, Quebec, CAN
- 2014 **Why We Use Brix to Test Plants**
Plant Elevators: movement of plant sap
Heavy Metals- but not the big-hair bands
Soil Works Annual Sales Meeting, Scottsdale, AZ
- 2014 **Toward a New Bioelectromagnetic Theory of Insect Olfaction**
University of Florida-ECE seminar series, Gainesville, FL

- 2014 **Brix, Aiming For a Higher level of Sugar, and What Does That Mean?**
Soil Works Annual Grower's Workshop, Yankton, SD
- 2014 **Why Plant Feeding Insects Need Unhealthy Plants to Survive**
IFAO Conference, London, Ontario, CAN
- 2014 **Harnessing Earth's Electromagnetic Fields**
Bio-Ag Symposium, Spokane, WA
- 2014 **Introducing Brix to Farmers and Energy in Agriculture**
Back to Your Roots- Sales Meeting, Saskatoon, CAN
- 2013 **Energy in Agriculture**
Soil Works LLC Annual Sales Meeting, Colorado Springs, CO
- 2013 **Insects to Unhealthy Plants and Energy in Agriculture**
Uncle Matt's Organic, Clermont, FL
- 2013 **Insects to Unhealthy Plants**
Symbionature, St. Remi, Quebec, CAN
- 2013 **Energy in Agriculture**
Soil Works LLC Annual Spring Meeting, Yankton, SD
- 2013 **Insects to Unhealthy Plants**
Symbionature, Florida, NY
- 2013 **Insects to Unhealthy Plants**
Back to Your Roots Workshop, Regina, SK, CAN
- 2012 **The Business of Scientific Patents**
MAN 4723, "Strategic Management",
Warrington College of Business Administration, University of Florida
- 2012 **What Do Insects Like To Eat?**
"Soil Safari", Organized by Soil Works, LLC, Yankton, SD
- 2012 **Challenging Paradigms in Insect Olfaction: New Evidence**
Annual Conference of the Society for Scientific Exploration
Boulder, CO
- 2012 **Why Insects Do Not Eat Healthy Plants**
Soil Works, LLC, Annual Spring Meeting, Yankton, SD
- 2012 **Paramagnetism in Agriculture**
Back to Your Roots Workshop, Regina, SK, CAN
- 2012 **Insects Do Not Like Healthy Plants**
Back to Your Roots Workshop, Regina, SK, CAN
- 2011 **Insect Olfaction: Beyond the Textbooks**
Think Tank organized by Dr. Arden Andersen, Tampa, FL
- 2009 **Stem Cell Research: Adult vs. Embryonic**
CUF meeting organized by attorney Thomas Pernice
- 2009 **Can Lepidopterans Smell Odors like Scientists Claim?**
McGuire Center for Lepidoptera, Gainesville, FL
- 2008 **Can the Lock and Key Model Explain Insect Olfaction?**
Utah Valley University, Orem, UT
- 2008 **Towards a Decoding of Insect Olfaction**
Utah Valley University, Orem, UT
- 2005 **Formation of a Scientific Theory: lessons learned from insect olfaction**

- 2003 Society for Scientific Exploration Annual Meeting, Gainesville, FL
How Effective are Stored Product Moth Traps?
 Heat Treatment Workshop, Manhattan, KS
- 2001 **Paramagnetism Roundtable- State of the Art**
 Panel discussion w/Philip S. Callahan, Ph.D., Malcolm Beck, Gary Wilson
 Acres USA National Conference, Minneapolis, MN
- 1999 **Biological Antennae**
 Sponsored by Nikken, Inc., Titusville, FL
- 1999 **Paramagnetism and the Shatnez**
 Sponsored by Nikken, Inc., Titusville, FL
- 1998 **Battling Pests with Electromagnetics**
 Acres USA National Conference, Minneapolis, MN
- 1998 **Paramagnetism**
 Bioneers Annual Conference, San Francisco, CA
- 1997 **Fleas and Man: an Attractive Relationship**
 Knights of Columbus Meeting, Gainesville, FL

PRESENTATIONS

- 2011 **Interaction in the Sensillae between Pheromone Binding Proteins (PBPs) and the Dendritic Membrane**
 Annual Meeting of the Entomological Society of America
 Reno, NV
- 2010 **Insect Olfaction in Relation to Protein Diffusion Coefficients**
 Annual Meeting of the Entomological Society of America
 San Diego, CA
- 2010 **Insect Olfaction and the Electrostatic Effect**
 Annual Meeting of the Association for Chemoreception Sciences
 St. Petersburg, FL
- 2009 **Pheromone Deposition on Insect Sensilla- electrostatics**
 Annual Meeting of the Entomological Society of America
 Indianapolis, IN
- 2009 **Cat Flea Larvae (*Ctenocephalides felis*) are Disrupted by Stray Electromagnetic Fields Emanating from Appliances**
 Annual Meeting of the Entomological Society of America
 Indianapolis, IN
- 2009 **Disproving the Current Theory of Insect Olfaction: temporal evidence**
 Society for Scientific Exploration Annual Meeting
 Charlottesville, VA
- 2009 **Movement of Pheromone inside Insect Olfactory Sensillae**
 Annual Meeting of the Association for Chemoreception Sciences
 Sarasota, FL
- 2008 **How Readily Does Pheromone Migrate Within the Sensilla?**
 Annual Meeting of the Entomological Society of America

- Reno, NV
- 2008 **Protein Semiconductors in Relation to Insect Olfaction**
Society for Scientific Exploration Annual Meeting
Boulder, CO
- 2008 **Insects and Plant Brix**
Southeastern Branch Meeting of the Entomological Society of America
Jacksonville, FL
- 2007 **How Quickly Can Pheromones Enter an Insect Sensilla?**
Annual Meeting of the Entomological Society of America
San Diego, CA
- 2007 **Insects and Sick Plants**
Society for Scientific Exploration Annual Meeting
East Lansing, MI
- 2007 **Can Dielectric Antenna Theory Help Explain Insect Olfaction**
Society for Scientific Exploration Annual Meeting
East Lansing, MI
- 2007 **Movement of Pheromone into Insect Olfactory Sensillae**
Annual Meeting of the Association for Chemoreception Sciences
Sarasota, FL
- 2007 **Electromagnetic Fields Influence Behavior in Cat Flea Larvae**
Southeastern Branch Meeting of the Entomological Society of America
Knoxville, TN
- 2006 **Problems with the Current Theory of Insect Olfaction**
Annual Meeting of the Entomological Society of America
Minneapolis, MN
- 2006 **Problems with the Current Theory of Insect Olfaction**
Southeastern Branch Meeting of the Entomological Society of America
Wilmington, NC
- 2006 **Can Dielectric Antenna Theory Help Explain Insect Olfaction**
Annual Meeting of the Association for Chemoreception Sciences
Sarasota, FL
- 2004 **The Electromagnetic Hypothesis of Olfaction: a study of the mechanisms and an answer to the enantiomer debate**
Society for Scientific Exploration Annual Meeting, Las Vegas, NV
- 2003 **Cat Flea Larvae, *Ctenocephalides felis*, Exhibit a Strong Taxis Response to a Human Stimulus**
Annual Meeting of the Entomological Society of America
Cincinnati, OH
- 2002 **A Novel Trap for Stored Product Moths**
Annual Meeting of the Entomological Society of America
Fort Lauderdale, FL
- 2002 **The Electromagnetic Hypothesis of Olfaction**
Society for Scientific Exploration Annual Meeting
Charlottesville, VA
- 2000 **Anomalous Field Detection in Insects**
Society for Scientific Exploration Annual Meeting

- London, Ontario CAN
- 1994 **Least Toxic Pest Control of Fleas**
SW Florida Professional Pest Control Operators and
Florida Pest Control Association (4 diff. counties)
- 1994 **Beneficial Insects**
Identification of Urban Pests seminar
University of Florida, Gainesville, FL
- 1994 **General Insect Identification**
Identification of Urban Pests seminar
University of Florida, Gainesville, FL

SELECTED CONSULTING

- 2014-present **Entomological Consulting**
For: Cole, Scott & Kissane, P.A., Jacksonville, FL
- 2014 **Bioelectromagnetic Consulting**
For: LifeWave, San Diego, CA
- 2013 **Entomological and Agricultural Consulting**
For: Symbionature USA
- 2012-present **Entomological, Agricultural, and Bioelectromagnetic Consulting**
For: Soil Works, LLC, Yankton, SD
- 2012-present **Entomological, Agricultural, and Bioelectromagnetic Consulting**
For: Back to Your Roots, Saskatchewan, CAN
- 2011-present **Entomological Consulting**
For: Uncle Matt's Organic., Clermont, FL
- 2005 **Professional Insect Report and Expert Testimony**
For: Benjamin, Certain & Lomax, P.A., Orlando, FL
- 1999-2000 **Professional Termite Reports and Expert Testimony**
For: Midlands Claim Administrators, Oklahoma City, OK

EXTENSION EXPERIENCE

- 2011 **Supervise cockroach dissection**
Requested by UF Neuroscience Club (15 students)
- 2008 **Guest speaker at AChemS sponsored event regarding olfaction**
G.Wiz- The Hands on Science Museum, Sarasota, FL
- 2007 **Guest speaker at grand opening of RoboBugs, the exhibit**
Museum of Science and Discovery, Fort Lauderdale, FL
- 1998 **Making an Insect Collection**
Hansen Nature Center, Tinker Nature Park, Rochester, NY
- 1998 **Bugs, Beetles and Butterflies**
Hansen Nature Center, Tinker Nature Park, Rochester, NY
- 1998 **Business Representative**
Williston Middle School- Career Day, Williston, FL

- 1995 **Guest speaker**
Wayne Middle School, Wayne, NY
Presentations in Entomology
- 1995 **Tour Guide**
UF Entomology & Nematology Department
For: ARC- Association for Retarded Citizens,
- 1995 **Video Narrator and Co-Producer, *Beneficial Insects***
University of Florida Publication # SV 436
Institute of Food and Agricultural Sciences (IFAS)
- 1995 **Video Narrator and Co-Producer, *Mistaken Identities***
University of Florida Publication # SV 458
Institute of Food and Agricultural Sciences (IFAS)
- 1995 **Video Narrator and Co-Producer, *Structural Pests***
University of Florida Publication #SV (discontinued)
Institute of Food and Agricultural Sciences (IFAS)
- 1994 **Guest speaker**
Franklin Douglas Middle School, Rochester, NY
Entomology presentations
- 1994 **Guest Speaker**
UF Entomology & Nematology Department
Presentation followed by Q&A- 7th-8th grade visiting students
- 1994 **Re-certification Training Program**
SW Florida Professional Pest Control Operators and
Florida Pest Control Association (4 presentations)
- 1994 **Extension Entomologist**
Insect Identification Laboratory
University of Florida, Dept. Entomology & Nematology
- 1994-present **Entomological Presentations to local schools (as requested)**
- 1993 **Special invited presenter**
Entomology presentations, November 12, 1993
UF Museum of Natural History, 3rd-5th graders

PATENTS

- Pending **Artificially Simulating Emissions from a Chemical Compound (co-author)**
U.S. Patent Pending
- 2015 **Radiating Systems for Affecting Insect Behavior (co-author)**
U.S. Patent # 8,984,800
- 2014 **System for Trapping Insects**
U.S. Patent # 8,893,428
- 2008 **Method and System for Dissipating and Amplifying Natural Emissions from a Resonant Cavity**
Australian Patent #AU 2003210970 B2

PUBLICATIONS

- Dykstra, T.M. (2010) Insects and the Speed of Smell Problem. *Edge Science* 4:9-13.
- Dykstra, T.M. (2000) Can Insects Detect Biofields? *MISAHA newsletter*, 28-29:14-18.
- Dykstra, T.M. (2000) Paramagnetic Effects on Plant Growth. *Acres USA*, 30(9):20-21.
- Dykstra, T.M. (2000) Revised and updated 25th Anniversary of *Tuning in to Nature* by Philip S. Callahan, 240 pp, Acres USA. Originally published by Devin-Adair, Old Greenwich, CT
- Dykstra, T.M. (1997) A Behavioral Study of Cat Fleas, *Ctenocephalides felis*, and their response to various stimuli. Ph.D. Dissertation, University of Florida, 290 pp.
- Nation, J.L., B.J. Smittle, K. Milne, and T.M. Dykstra (1995) Influence of irradiation on development of Caribbean fruit fly (Diptera: Tephritidae) larvae. *Ann. Entomol. Soc. Am.* 88(3):348-352.
- Dykstra, T.M. (1995) Insect Identification. Chapter in: *Pests in and Around the Florida Home*. Publication # SP 134, Institute of Food and Agricultural Sciences, University of Florida
- Dykstra, T.M. (1994) Pheromonotropic activity in the abdominal nerve cord of the tobacco hornworm, *Manduca sexta*. M.S. Thesis, University of Florida, 80 pp.

INVITED BOOK REVIEWS

- 2009 *The Body Electric* by Robert Becker, M.D. and Gary Seldon (1985) *J. Sci. Explor.* 23(2):232-236. Request from the Society for Scientific Exploration on the occasion of Dr. Becker's passing.
- 2009 *The Body Electric* by Robert Becker, M.D. and Gary Seldon (1985) *Edge Science*, October 2009, pp. 13-14 (republished in abridged version)

NON-AUTHORED PUBLICATIONS

- 2004 Grossman, J. (2004) Building a Better Moth Trap. *The World and I*, April issue. pp. 142-149.

MANUSCRIPTS REVIEWED

- 2002 *Annals of the Entomological Society of America* (1)
- 2005 *Journal of Economic Entomology* (1)

TRADESHOW BOOTHS ATTENDED

- 2013 **Citrus Expo Tradeshow**
Representing Preferred Source and Mycorrhizal Applications, Inc.
Products: various

2011 August 14-15, 2013, Ft. Myers, FL
MOSES Annual Conference
 Representing Technology SG
 Product: innTrap®

2010 February 24-26, 2011, Lacrosse, WI
Entomological Society of America
 Representing Technology SG
 Product: innTrap®

2010 December 12-16, 2010, San Diego, CA
Acres USA Annual Conference
 Representing Technology SG
 Product: innTrap®
 December 9-11, 2010, Indianapolis, IN

CONFERENCES ORGANIZED

2012 **Society for Scientific Exploration Annual Conference**
 Program Committee Chairman
 Boulder, CO, June 20-23, 2012

2005 **Society for Scientific Exploration Annual Meeting**
 Local Organizer, Program Committee member
 Gainesville, FL, May 18-21, 2005

1994 **Identification of Urban Pests**
 Local Organizer, Program Coordinator
 University of Florida
 Gainesville, FL, March 9-11, 1994

PROFESSIONAL SOCIETY MEMBERSHIPS

2004-present Association for Chemoreception Sciences
 1998-2012 Bioelectromagnetics Society
 1998-present Acres U.S.A.
 1995-present Entomological Society of America
 1995-2012 Society for Scientific Exploration

HONORARY/AWARDS/ELECTED POSITIONS

2011-present *Panel Judge (Industry member)* Entomological Society of America-
 Biochemistry, Toxicology and Molecular

2005-2008 *Secretary* Society for Scientific Exploration

2005-2007 *Councilor* Holy Faith Catholic Church

2004 *All-American (4x)* US Masters Swimming

2000-present *Adjunct Faculty Member* Union College

2000-2001 *Councilor* Society for Scientific Exploration

1997-1999

Councilor

Holy Faith Catholic Church

PERSONAL INFORMATION

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| Hometown | Henrietta, New York (suburb of Rochester) |
| Marital Status | Married (Karen) |
| Children | Maximilian Kolbe Dykstra † Gregory Samuel Dykstra (2007) Benedict John Dykstra (2008) Lydia Cecilia Dykstra (2010) Leo Albert Dykstra (2013) Teresa Gemma Dykstra (2015) |
| Country of Citizenship | United States of America |
| Religious Association | Roman Catholic |
| Sports | Competitive Swimming, Volleyball |
| Hobbies | Woodworking, pencil drawing/scientific illustration, reading |