# **Curriculum Vitae**

#### **LAWRENCE J. WEIDER**

Department of Biology University of Oklahoma 730 Van Vleet Oval Room 314 Norman, OK 73019-0230

**Position:** Professor of Biology

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Faculty Profile: <a href="http://www.ou.edu/cas/biology/people/faculty/lawrence-weider">http://www.ou.edu/cas/biology/people/faculty/lawrence-weider</a>

Lab Website: http://waterfleaworld.oucreate.com/

Birthplace: Rochester, New York

Citizenship: U.S.A.

Languages: English (native)

German (conversant)

#### **Education**

1984 Ph.D. - **University of Illinois at Urbana-Champaign**, Department of Ecology, Ethology, and Evolution

Dissertation: Spatial and temporal genetic heterogeneity in a natural *Daphnia* population: Ecological and physiological differences between genotypes.

Major adviser: Dr. Michael Lynch

1978 B.S. (Biology/Chemistry, Magna cum laude) - St. Bonaventure University, New York.

#### **Areas of Research Interest**

Evolutionary ecology, population/ecological genetics, population ecology, physiological ecology, aquatic ecology, arctic ecology, life-history evolution, metapopulational dynamics, conservation ecology.

### **Research Experience**

July 2012 – Present: Professor, Department of Biology, University of Oklahoma (OU)

July 2005 – June 2012: Professor, Department of Zoology, OU; Director, The University of Oklahoma Biological Station (UOBS).

January 1999 – June 2005: Associate Professor, OU Department of Zoology; Director, UOBS.

September 1990 - December 1998: Associate Research Scientist (tenured), Max-Planck-Institut für Limnologie, Plön, Germany. Project titles: (i) phylogenetics and ecological genetics of asexual species complexes; (ii) breadth of adaptation in sexual vs. asexual populations; (iii) niche breadth and life history variation among interspecific hybrids and parentals; (iv) impact of disturbance on maintenance of genetic diversity; (v) influence of predator chemical cues on prey life histories and behaviour; (vi) mechanisms maintaining genetic variation in clonal populations; (vii) long-term temporal shifts in population genetic structure assessed from dormant egg bank propagules.

September 1988 - August 1990: Assistant Professor (limited-term), Department of Biological Sciences, Great Lakes Institute, University of Windsor, Windsor, Ontario, Canada. Project titles: (i) "Ecological genetics of asexual aquatic invertebrates"; (ii) "The impact of toxic contaminants on mutation rates in fish"; (iii) "Development of a comprehensive stream survey for the Little River, Essex County, Ontario".

June 1987 - August 1988: Postdoctoral Fellow, Max-Planck-Institut für Limnologie, Plön, Germany. Project title: "Population genetics and ecophysiology of aquatic invertebrates".

June 1984 - June 1987: Postdoctoral Fellow, Department of Biological Sciences, University of Windsor, Ontario, Canada. Project title: "Ecological genetics of arctic populations of aquatic invertebrates".

January - May 1984: Graduate Research Assistant, University of Illinois. Project title: "The ecological genetics of *Daphnia pulex* populations".

October - December 1983: Research Fellow, Max-Planck-Institut für Limnologie. Project title: "Differential response of *Daphnia* genotypes to oxygen stress: respiration rates, hemoglobin content, and low oxygen tolerance".

January - October 1983: Graduate Research Assistant, University of Illinois. Project title: "The ecological genetics of *Daphnia pulex* populations".

October - December 1982: Research Fellow, Max-Planck-Institut für Limnologie. Project title: "Measuring the carbon balance in *Daphnia*".

January 1981 - October 1982: Graduate Research Assistant, University of Illinois. Project title: "The ecological genetics of *Daphnia pulex* populations".

### **Research Experience** (continued):

August - December 1980: Graduate Research Assistant, University of Illinois. Project title: "Apparent vs. non-apparent eutrophication: the interactions of enrichment and fish predation".

May - August 1980: Graduate Research Assistant, University of Illinois. Project title: "The ecological genetics of *Daphnia pulex* populations".

January - May 1980: Graduate Research Assistant, University of Illinois. Project title: "The adaptive significance of cladoceran life-histories".

### **Teaching Experience**

Professor, University of Oklahoma (OU), Evolution, Fall '14, '15, '16, '17, '18, '19, '20

Professor, OU, Adaptation & Climate Change, Spring '13, '16, '18

Professor, OU, Global Environmental Change, Summer 2008

Professor, OU, Ecological Genetics, Spring '06, '07, '09, '11, '13, '15.

Professor, OU, **Ecology & Evolutionary Biology (EEB) Graduate Seminar**, Fall 2005 to Spring 2009.

Prof./Assoc. Prof., OU, **Conservation Genetics**, Spring'01,'03,'05,'08,'10,'12,'14,'17,'19,'20

Associate Professor, OU, Molecular Ecology, Spring 2000, 2002, 2004.

Research Scientist: MPI, "Molecular Methods in Ecology and Systematics", hands-on lab experience and training of various students (graduate, undergrad., high-school level), technicians, technicians-in-training (AZUBIS), postdocs, and visiting scientists from 1992-1998.

Research Scientist: MPI, **Arctic Ecology Field Course**, (guest lecturer), University of Guelph, Ontario, August 1994, Science Institute of the Northwest Territories, Igloolik.

Research Scientist: MPI, **Graduate Seminar - Population and Community Ecology** (coinstructor), Spring 1991.

Assistant Professor: University of Windsor (UW), Evolutionary Ecology, Spring 1990.

Assistant Professor: UW, Undergraduate Research Seminar, (co-instructor), Spring 1990.

Guest Lecturer: UW, **Applied Ecology**, Fall 1989.

Guest Lecturer: UW, **Evolution**, Spring 1989.

Guest Lecturer: UW, Aquatic Ecology, Fall 1985, 1986, 1989.

Visiting Lecturer: University of Illinois (U of I), Limnology, Fall 1981.

Graduate Teaching Assistant: U of I. General Biology, (non-majors), Spring 1979.

Graduate Teaching Assistant: U of I, Limnology, Fall 1978, 1979.

# **Graduate Students Supervised/Trained**

- 2018- Matthew Wersebe (current Ph.D. student, U. of Oklahoma)
- 2015- Emily Kiehnau (current Ph.D. student, U. of Oklahoma)
- 2013-15 Aime'e Yousey (M.S. student, U. of Oklahoma)
- 2012-17 Rachel Harnett (Ph.D. student, NSF Graduate Fellow, U. of Oklahoma)
- 2010-16 Billy Culver (Ph.D. student, U. of Oklahoma)
- 2008-10 Mingyan Lin (M.S., U. of Oklahoma)
- 2002-07 Punidan Jeyasingh (Ph.D., U. of Oklahoma)
- 2000-02 Mary Johnston (B.S., M.S., U. of Oklahoma)
- 2000-01 Wenjun Wang (Ph.D. student, U. of Oklahoma)
- 1997-00 Petra Limburg (Ph.D., U. of Kiel, *Germany*)
- 1996-99 Thomas Berendonk (Ph.D., U. of Kiel, *Germany*)
- 1997-98 Angelika Denk (M.Sc. student, U. of Regensburg, *Germany*)
- 1994-97 Suzanne E. Mitchell (Ph.D. NERC-CASE, U. of Hull, *England*)
- 1997 Lilla Pokutta (M.Sc. U. of Hamburg, *Germany*)
- 1989-90 Mary H. Murdoch (M.Sc. U. of Windsor, *Canada*)

# **Undergraduate Students Supervised/Trained**

- 2020-21 Asa Candler (B.S., U. of Oklahoma, OU Honors College)
- 2020-21 Tara Curb (B.S., U. of Oklahoma)
- 2019-20 Juliet Agadagba (B.S., U. of Oklahoma)
- 2019-20 Kaylee Gibbons (B.S., U. of Oklahoma)
- 2019-20 Amber Woolley (B.S., U. of Oklahoma)
- 2018-20 Ekene Nwakoby (B.S., U. of Oklahoma, OU Honors College, UROP award winner)
- 2018-19 Kristina Floyd (B.S., U. of Oklahoma, *OU Honors College*)
- 2018-19 Brandon Day (B.S., U. of Oklahoma, *National Merit Scholar*)
- 2017-19 Ritu Kulkarni (B.S., U. of Oklahoma, *OU Honors College*)
- 2017-18 Jake Scott (B.S., U. of Oklahoma)
- 2017-18 Ronak Tapiavala (B.S., U. of Oklahoma)
- 2016-17 Christian Brewer (B.S., U. of Oklahoma, *National Merit Scholar*, *OU Honors College*)
- 2016-18 Michael Onwuchuruba (B.S., *National Merit Scholar*, U. of Oklahoma)
- 2015-16 Hayley Severson (B.S., U. of Oklahoma, National Merit Scholar, UROP award winner)
- 2015 Arianne Rick (B.S., U. of Oklahoma, *OU Honors College*)
- 2013-16 Frank "Weston" Speer (B.S., U. of Oklahoma, UROP award winner)
- 2011-13 Jeff Medders (B.S., U. of Oklahoma)
- 2012-13 Alex Mutz (B.S., U. of Oklahoma)
- 2011 Rosa Yorks (B.S., Oklahoma State Univ.)
- 2011 Tiffany Glover (B.S., Langston Univ., Oklahoma)
- 2011 Garrett Schulze (Kingston High, Oklahoma)
- 2011 Kelsie Montgomery (high-school student, Red River Technology Center, Oklahoma)
- 2010 Michael Leitch (B.S., U. of Oklahoma)
- 2005-06 Laura Harolds (B.S. Honors, U. of Oklahoma, UROP award winner)
- 2003 Andrea Bean (B.S., U. of Oklahoma)
- Jaime Ramos (B.S., U. of Oklahoma)
- 2002 Robyn Moran (B.S., S.W. Okla. State)
- 2002 Lynette Matthews (B.S., Arizona State U.)
- 2002 Amy Ramsey (B.S., Botany, U. of Oklahoma)
- Jeremiah Smith (B.S., U. of Oklahoma)
- 2001 Kim Land (B.S., U. of Oklahoma)

# **Undergraduate Students Supervised/Trained** (continued):

- 2000 Amanda Warren (B.S., U. of Oklahoma)
- Gerhard Griebe (B.Sc. honors U. of Oldenburg. *Germanv*) 1992
- 1992 Andreas Heinken (B.Sc. - Free University - Berlin, Germany)
- 1992 Adrian Howe (B.Sc. - EC Comet Program, U. of Swansea, Wales)
- 1989-90 Catherine Delvanminck (B.Sc. honors U. of Windsor, *Canada*)

#### **Students Examined**

- 2019 Antonio Suppa (Ph.D. – U. of Ferrara, *Italy*, Ph.D. external examiner)
- 2018 Allison Mann (Ph.D., Dept. of Anthropology, U. of Oklahoma)
- 2017 Anuj Guruacharya (Ph.D., Dept. of Biology, U. of Oklahoma)
- 2017 Kai Wang (M.S., Dept. of Biology, U. of Oklahoma)
- 2017 Patrick Olson (M.S., Dept. of Biology, U. of Oklahoma)
- 2017 Christopher Acy (M.S., Dept. of Biology, U. of Oklahoma)
- 2016 Diane V. Landoll (Ph.D., Dept. of Biology, U. of Oklahoma
- 2015 Feifei Zhang (Ph.D., Dept. of Biology, U. of Oklahoma)
- 2015 Randall J. Bendis (Ph.D., Dept. of Biology, U. of Pittsburgh)
- 2015 Andrea Contina (Ph.D., Dept. of Biology, U. of Oklahoma)
- 2013 Richard Zamor (Ph.D., Dept. of Biology, U. of Oklahoma)
- 2013 Elizabeth Mosteller Burba (Ph.D., Dept. of Biology, U. of Oklahoma)
- 2012 Xia Xu (Ph.D., Dept of Botany/Microbiology, U. of Oklahoma)
- Daniel Dusang (M.S., Dept of Zoology, U. of Oklahoma) 2011
- 2011 Amanda Weingardner (M.S., Dept of Integrative Biology, U. of Guelph, Canada)
- 2010 Ruediger Riesch (Ph.D., Dept. of Zoology, U. of Oklahoma)
- 2010 Emily Remmel (M.S., Dept of Zoology, U. of Oklahoma)
- Nicole Kohmesher (M.S., Dept. of Zoology, U. of Oklahoma) 2007
- Justyna Wolinska (Ph.D. Swiss Fed. Univ., Switzerland, Ph.D. external examiner) 2006
- 2006 Ferrella March (M.S., Dept. of Zoology, U. of Oklahoma)
- 2005 Joachim Mergeay (Ph.D. – Catholic U., Leuven, *Belgium*, Ph.D. external examiner)
- 2004 Melania Cristescu (Ph.D. – U. of Guelph, *Canada*, Ph.D. external examiner)
- 2004 Mary Kay Johnston (M.S., Dept. of Zoology, U. of Oklahoma)
- 2002 Rickey Cothran (M.S., Dept. of Zoology, U. of Oklahoma)
- 2002 Laura Young (M.S., Dept. of Botany/Microbiology, U. of Oklahoma)
- 2001 Marcos Matthes (M.S., Dresden Tech. Univ., *Germany*, external examiner)
- 2000 Petra Limburg (Ph.D., U. of Kiel, *Germany*, committee member/co-advisor)
- 1997 Klaus Schwenk (Ph.D., U. of Utrecht, Netherlands, Ph.D. external examiner)
- 1995 M. Cerny (Ph.D., Charles U., Praque, Czech Republic, Ph.D. opponent)
- 1995 F. Dufresne (Ph.D. - U. of Guelph, *Canada*, Ph.D. external examiner)
- 1994 Piet Spaak (Ph.D., U. of Utrecht, *Netherlands*, Ph.D. external examiner)

#### **Current Thesis/Dissertation Committee Member for other (non-lab) students:**

M. Afkhami (EEB/Bio., Ph.D.), C. Bates (Bio., M.S.), A. DiPilla (Bio., M.S.), K. Goodenough (EEB/Bio. Ph.D.), E. Minkin (Bio., M.S.), G. Tolentino Ramos (Bio., M.S.), K. Wang (EEB/Bio., Ph.D.)

#### **Postdoctoral Associates**

- 2012-15 Dr. Joaquin Muńoz, U. of Oklahoma Biological Station/Sevilla, Spain
- 2010-13 Dr. Philip Morton, U. of Oklahoma Biological Station
- 2007-15 Dr. Dagmar Frisch, U. of Oklahoma Biological Station
- 2006-07 Dr. James Larson, U. of Oklahoma Biological Station
- 2005-06 Dr. Chad Hargrave, U. of Oklahoma Biological Station

#### **Postdoctoral Associates** (continued):

- 2000-01 Dr. Richard Broughton, Dept. of Zoology/Biological Station, U. of Oklahoma
- 1997 Dr. Martin Cerny, Dept. of Hydrobiology, Charles University, Prague, Czech Rep.
- 1994-96 Dr. Piet Spaak, Centre for Limnology, Netherlands Inst. of Ecology, Nieuwersluis, NL
- 1995 Dr. France Dufresne, Dept. of Zoology, U. of Guelph, Ontario, *Canada*.
- 1994-95 Dr. Luc De Meester, Laboratory of Animal Ecology, U. of Ghent, Belgium.
- 1991-93 Dr. Joanna Pijanowska, Department of Hydrobiology, U. of Warsaw, *Poland*.

# **Awards and Recognition**

- 2019 The University of Oklahoma Regents' Award for Superior Teaching
- 2013 Visiting Scholar/Professor: U. of Birmingham, *U.K.* (Oct-Dec).
- 2013 Visiting Scholar/Professor: Katholieke Universiteit Leuven, *Belgium* (Aug-Oct).
- 2007-17 Affiliated Member: Centre for Ecol. & Evol. Synthesis (CEES), U. of Oslo, Norway.
- 1987 Postdoctoral Fellowship: Max-Planck-Gesellschaft, *Germany*.
- 1984 Postdoctoral Fellowship: NSERC, Canada.
- 1984 Sigma Xi Student Paper Competition, University of Illinois.
- 1983 Pre-doctoral Research Fellowship: Max-Planck-Institut für Limnologie, *Germany*.
- 1982 Pre-doctoral Research Fellowship: Max-Planck-Institut für Limnologie, *Germany*.
- 1978 Distinguished Biology Undergrad. Student (Runner Up), St. Bonaventure U.
- 1977 Elected President, Delta Epsilon Sigma Honor Society, St. Bonaventure U. Chapter.
- 1974 Valedictorian, Fairport High School (N.Y.) Class of 1974

Grants and Funding Held (TOTAL – All Project Costs: \$9,860,780; Total Attributable to Weider Lab - \$3,635,170 consisting of \$3,298,098 external and \$337,072 internal sources.)

#### U.S. Funding Agencies (Federal):

2013-2017 **\$314,849** – National Science Foundation (NSF)-IOS-OEI, "Collaborative Research: A millennial-scale chronicle of organism-environment interactions resulting in microevolutionary physiological and genomic shifts in *Daphnia*", (part of a larger **\$872,717** project with Oklahoma State U. and Science Museum of Minnesota St. Croix River Watershed Station; P.D. Jeyasingh, PI, L.J. Weider, co-PI; M.E. Edlund, co-PI).

2012-2015 **\$533,064** – U.S. Department of Education, Graduate Assistance in Areas of National Need (GAANN) Program, "Ecology and Evolutionary Biology", (J. Kelly, PI, L.J. Weider and six others, co-PIs; includes **\$133,266** match from OU).

2011-2016 **\$248,642** NSF – Field Stations & Marine Labs (FSML) – "Building research collaboration for the future: enhancement of the UOBS aquatic research park", (K.D. Hambright, PI, L.J. Weider & G.A. Wellborn, co-PIs).

2009-2013 **\$363,691** – NSF–DEB; IOS-OEI "Collaborative Research: Organism-environment interactions - impact of cultural eutrophication on *Daphnia* tracked by genomics, physiology and resurrection ecology", (part of a larger **\$777,828** project with Oklahoma State Univ.; LJ Weider PD/PI; PD Jeyasingh co-PI).

# Grants and Funding Held (continued):

U.S. Funding Agencies (Federal)(continued):

2004-2006 **\$179,921** – NSF – Multi-user Equipment (MUE) Program, "A capillary DNA sequencer, quantitative PCR machine, and phosphor/fluorescent digital imager for the University of Oklahoma Department of Zoology", (R. Broughton, PI, L.J. Weider, D. Durica, R. Hewes, co-Pls; Total cost of project is **\$257,030**, including a **\$77,109** institutional match).

2002-2005 **\$187,500** – NSF-FSML: "Expansion of the Housing Facilities for Guest Researchers at the University of Oklahoma Biological Station". (L.J. Weider, PI, K.D. Hambright and G.A. Wellborn, co-Pls). (Total amount of **\$350,000**, which includes a **\$162,500** institutional match to build a brand-new guest researcher apartment building at the OU Biological Station. NOTE: I was instrumental in raising **~\$70,000** of this match from private donors.)

1999-2004 **\$386,717** – NSF - Integrated Research Challenges in Environmental Biology (IRCEB), "Biological Stoichiometry: from genes to ecosystems". Co-PI, as part of a larger (**\$2,842,162**) proposal with research teams at Arizona State U., U. of Minnesota, U. of Arizona, and U. of Washington.

International Funding Agencies:

### **European Union**

2012-2015 **\$450,000** (approx) – European Union Marie Curie Outgoing International Postdoctoral Fellowship Program; "Environmental adaptation of the genome: A *Daphnia* model under cultural eutrophication" ("ADAPT-ENVGENOME"), in collaboration with the Donána Biological Station, Spain; (J. Munoz, PI, L.J. Weider and A. Green, co-PIs)

2007-2010 **\$450,000** (approx.) – European Union Marie Curie Outgoing International Postdoctoral Fellowship Program; "EVOLEXOTIC" – Aquatic invasive species – in collaboration with the Donána Biological Station, Spain; (D. Frisch, PI, L.J. Weider and A. Green, co-PIs).

#### NATO

1995-1996 **125,000 BF** (\$4,200) - NATO Collaborative Research Grant Program (funding interlaboratory travel). "Ecological genetics of arctic *Daphnia*: Model for monitoring environmental change". Renewal application. Project coordinator: L.J. Weider; collaborators: A. Hobæk, T. J. Crease, and P.D.N. Hebert.

1992-1994 **200,000 BF** (\$6,500) - NATO Collaborative Research Grant Program (funding interlaboratory travel). "Ecological genetics of arctic *Daphnia*: Model for monitoring environmental change". Project coordinator: L.J. Weider; collaborators: A. Hobæk, T. J. Crease, and P.D.N. Hebert.

# European Science Foundation (ESF)

1993 **25,000 FF** (\$5,000) - European Science Foundation Grant to fund "Evolutionary Ecology of Clonal Organisms" Workshop, 26-28 June, Plön, Germany.

1992 **2,000 DM** (\$1,200) - European Science Foundation Travel Grant - Network on Population Ecology and Genetics.

### Grants and Funding Held (continued):

International Funding Agencies (continued):

# Germany:

1997-2000 **259,700 DM** (\$150,000) - Max-Planck-Gesellschaft Starker-Werner Fond. "Dauerstadien-Banken in Seesedimenten: eine Möglichkeit, Populationen zu untersuchen, die während der anthropogenen Veränderung von Seen verschwunden sind". (W. Lampert and L. J. Weider, co-Pls).

1997-1998 **20,000 DM** (\$13,000) - German (DAAD) Academic Research Exchange Grant (in conjunction with NSF submission by N.G. Hairston Jr, Cornell Univ.), "Migration from the past: Fitness characters of zooplankton from long-lived dormant stages", (W. Lampert, L. J. Weider, and N. G. Hairston Jr., co-Pls). To support inter-laboratory travel for Plön research team to visit Cornell University.

1995 **2,100 DM** (\$1,500) Deutsche Forschungsgemeinschaft (DFG) Travel Grant to attend Society for the Study of Evolution meeting, July 1995, Montreal, Canada

1991 **2,000 DM** (\$1,200) - British-German Academic Research Exchange Program Travel Grant (to establish ties between my lab and Prof. Gary Carvalho's lab - U. Swansea Wales)

#### Norway

2010-2013 **12,372,000 NOK (~\$2,097,000 U.S.**) – Research Council of Norway (RCN) – "Genome size, cell size and growth; searching for the causal links (GENOME)"; (D.O. Hessen, PI; LJ Weider, co-PI along with 7 others – OU component - **~\$85,000**).

1993-1994 **20,000 NOK** (\$4,000) - Norwegian Polar Research Institute Grant - "Ecological genetics of Greenland and Iceland *Daphnia*", (A. Hobæk and L. J. Weider co-Pls).

1992-1993 **25,000 NOK** (\$5,000) - Norwegian Polar Research Institute Grant - "Ecological genetics of Svalbard *Daphnia*", (A. Hobæk and L. J. Weider, co-Pls).

# Sweden

1997-1999 **1,440,000 SEK** (~\$160,000 U.S.) - Swedish Polar Research Secretariat, Royal Swedish Academy of Sciences, Tundra Northwest 1999, "Ecology, phylogeography and genetic diversity of an arctic *Daphnia* species complex", (A. Hobæk and L..J. Weider, co-Pls).

#### **United Kingdom**

2015-2016 **\$100,000** (approx.) – The Royal Society (U.K.) Theo Murphy Scientific Meeting Proposal, "Elements, genomes and ecosystems: cascading nitrogen and phosphorus impacts across levels of biological organization", (A. Leitch P.I., L.J. Weider co-P.I. with P.D. Jeyasingh, D.O. Hessen, M. Neiman, and I. Leitch), 1-2 June 2015, Chicheley Hall, Milton Keynes, U.K.

2013 £700 (\$1,000) – U. of Birmingham (U.K.) School of BioSciences, sabbatical support (airfare) for L.J. Weider (P.I.); collaborative projects with host – J.K. Colbourne (co-P.I.)

1994-1997 **£30,000** (\$54,000) - NERC-CASE Grant (U.K.), "Ecological differentiation and clonal coexistence of *Daphnia* genotypes", (G.R. Carvalho and L.J. Weider, co-Pls).

### Grants and Funding Held (continued):

International Funding Agencies (continued):

#### Belgium

2013 €3,800 (~\$5,000) – Katholieke Universiteit Leuven Research Fund fellowship SF/12/009, "Colonization history, climate change, and environmental genomics in arctic freshwater systems" – sabbatical support for L.J. Weider (P.I.), host - Luc De Meester (co-P.I.).

#### Canada

2008-2009 **\$3,000 CAD** (approx.) – Northern Research Fund – Churchill Northern Studies Centre (CNSC) – "Global Climate Change: Examining Ecological Genetic Changes in the Churchill Rock Pool *Daphnia* populations during the past ~25 years."

1989-1992 **\$66,000 CAD** - Natural Sciences and Engineering Research Council (NSERC), Canada, Operating Grant, "Ecological genetics of asexual aquatic invertebrates".

1989-1992 **\$15,789 CAD** - NSERC Equipment Grant, "Compound microscope and photomicrographic unit", (L.J. Weider and S.S. Schwartz, co-Pls).

1989-1990 **\$169,369 CAD** - Contract from the City of Windsor and the Ontario Ministry of the Environment, "Little River comprehensive stream study - Little River basin pollution control plan", (granted to Great Lakes Institute, University of Windsor, Ontario).

#### U.S. Funding Agencies (State-level):

2000-2001 **\$39,284** - Oklahoma Department of Wildlife Conservation, "Stock identification of Striped Bass in Lake Texoma using Molecular Markers" (L.J. Weider, PI).

Internal (University) Grants:

2018-2019 **\$14,119** – University of Oklahoma (OU) Research Council Faculty Investment Program (FIP), "Using *Daphnia* resurrection ecology to understand environmental impacts of nutrient pollution".

2018 **\$7,500** – OU College of Arts & Sciences (CAS) Senior Faculty Summer Fellowship Program (SFSF) – "Using *Daphnia* resurrection ecology to understand environmental impacts of nutrient pollution".

2012-2014 **\$13,637** – OU Research Council Faculty Investment Program (FIP), "Ecological genomics in a time-capsule – integrating environmental change with next-generation sequencing and resurrection ecology in the waterflea, *Daphnia pulicaria*", (L.J. Weider, PI; D. Frisch and P. Morton, co-PIs).

2008-2009 **\$6,400** – OU Research Council, "Global climate change: Examining ecological genetic changes in arctic *Daphnia* rock pool populations during the past ~25 years".

# Grants and Funding Held (continued):

Internal (University) Grants (continued):

2007-2008 **\$44,750** – OU College of Arts & Sciences (CAS) Instructional Technology Program – "Improvements and Upgrading of the Instructional Computing Capabilities for Wireless Internet Access at The University of Oklahoma Biological Station (UOBS)", (L.J. Weider, P.I.)

2006-2007 **\$2,710** – OU Research Council, "NSF proposal enhancement: Tolerance constraints and genetic specialization" (L.J. Weider, PI; Total cost of project is **\$3,210** including a **\$500** UOBS match).

2005-2006 **\$4,900** – OU Research Council, "The ecology and genetics of an exotic invasive species, *Daphnia lumholtzi* (L.J. Weider, PI; Total cost of project was **\$5,950** including a **\$1,050** UOBS match).

2003-2004 **\$19,113** – OU College of Arts & Sciences (CAS) Instructional Technology Program – "Improvements and Upgrading of the Instructional Computing Capabilities at The University of Oklahoma Biological Station (UOBS)".

2003-2004 **\$1,000** – OU Presidential International Travel Fellowship Program, "Increasing Exchange ties with the Blaise-Pascal University Field Station in Besse, France".

2001-2002 **\$22,314** – OU Research Council – "Molecular ecology and evolution facility". (L.J. Weider, PI, G.A. Wellborn, J.N. Thompson, C.C. Vaughn, L.Vitt, co-PIs).

2000-2001 **\$24,800** – OU College of Arts & Sciences (CAS) Instructional Technology Program – Expansion of the Instructional Computing Capabilities at The University of Oklahoma Biological Station (UOBS).

1999-2000 **\$8,000**, OU College of Arts & Sciences – "Instructional Computer Upgrade and Enhancement for The University of Oklahoma Biological Station (UOBS)". (L. J. Weider and W. J. Matthews, co-Pls).

1999-2000 **\$3,000**, OU Research Council – "Travel Support for SWEDARCTIC Tundra Northwest "99 Expedition."

1988-1989 **\$3,500 CAD** - University of Windsor (Canada) Research Board, "Population ecology and genetics of aquatic invertebrates".

# **Grants and Funding (pending):**

2020-2023 **\$361,419** NSF-IOS-IEP Proposal: "Collaborative Research: Integrating glycolysis and phosphorus cycling by linking allelic variation in phosphoglucose isomerase with phosphorus use in *Daphnia*" (part of a larger **\$1,089,356** project with Oklahoma State U. and Science Museum of Minnesota). (Revising for resubmission.)

2020-2021 **148,525 NOK** (~\$16,500) U.S.-Norway Fulbright Foundation: "Arctic Freshwater Systems and Biodiversity Monitoring: Important Sentinels of Climate Change" (host: UofOslo).

### Additional Funding/Fund-raising:

As Director of The University of Oklahoma Biological Station (UOBS), I was instrumental in establishing the Friends of UOBS alumni group. This resulted in the direct contribution of ~\$150,000 in support from this group and the further establishment of endowment accounts that totaled ~\$270,000 (primarily designated to support student scholarships/research fellowships).

#### **Publications:**

- 86.) Marková, S., M. Strážnická, H. Lanier, H. Henttonen, J. Searle, **L.J Weider** and P. Kotlík. 2020. High genomic diversity in the bank vole at the northern apex of a range expansion: the role of multiple colonizations and end-glacial refugia. *Molecular Ecology* 29:1730-1744. <a href="https://doi.org/10.1111/mec.15427">https://doi.org/10.1111/mec.15427</a>
- 85.) Kiehnau, E.L. and **L.J. Weider**. 2019. Phototactic behavior of native *Daphnia* in the presence of chemical cues from the non-native predator *Bythotrephes*. *Oecologia* 190:799-809. <a href="https://doi.org/10.1007/s00442-019-04461-6">https://doi.org/10.1007/s00442-019-04461-6</a>
- 84.) Yousey, A.M., P. Roy Chowdhury, N. Biddinger, J. Shaw, P.D. Jeyasingh and **L.J. Weider.** 2018. Resurrected "ancient" *Daphnia* genotypes show reduced thermal stress tolerance compared to modern descendants. *Royal Society Open Science* 5: 172193. http://dx.doi.org/10.1098/rsos.172193
- 83.) **Weider, L.J.**, P.D. Jeyasingh, and D. Frisch. 2018. Evolutionary aspects of resurrection ecology: Progress, scope, and applications an overview. *Evolutionary Applications* 11:3-10; DOI: 10.1111/eva.12563
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**Presentations:** (@ invited talk; #conference organizer):

2019 "Morphological changes of native *Daphnia* species in response to the invasive predator *Bythotrephes longimanus*", **Ecological Society of America**, 11-16 August, Louisville, KY (E. Kiehnau and L.J. Weider).

2018 "Send in the clones: *Daphnia* as a model clonal organism"<sup>®</sup> (*keynote address*), **12**<sup>th</sup> **International Clonal Plant Symposium**, 29 July–2 Aug., Bowdoin College, Brunswick, ME.

2018 "Don't go into the light: Phototactic behavior of native *Daphnia* in the presence of chemical cues from an invasive predator (*Bythotrephes longimanus*)", **Ecological Society of America**, 5-10 August, New Orleans, LA (E. Kiehnau and L.J. Weider, poster).

2018 "Variation in phosphorus use among recombinant *Daphnia* genotypes", **Society for Freshwater Science**, 20-24 May, Detroit, MI, (R. Sherman, B. Cougar, A. Ragavendran, L.J. Weider, and P.D. Jeyasingh).

2018 "Using resurrection ecology of freshwater zooplankton to understand evolutionary responses to nutrient pollution" OU Water Day, 16 November, U. of Oklahoma, Norman, OK

2017 "Resurrected "ancient" *Daphnia* genotypes show reduced thermal stress tolerance compared to modern descendants", **Evolution 2017**, 23-27 June, Portland, OR (A.M. Yousey, P. Roy Chowdhury, N. Biddinger, J.H. Shaw, P.D. Jeyasingh, and L.J. Weider, poster).

2017 "Shifting size distributions under intra- and interspecific competition", **Ecological Society of America**, 6-11 August, Portland, OR (R. Hartnett and L.J. Weider).

2016 "Identifying QTLs underlying phosphorus use in a resurrected *Daphnia* mapping population", **14**<sup>th</sup> **Annual Ecological Genomics Symposium**, 28-230 October, Kansas City, MO (R.E. Sherman, K.D. Baker, B. Couger, L.J. Weider, and P.D. Jeyasingh, poster).

2016 "Using resurrection ecology to study impacts of environmental change on evolving populations of *Daphnia*", **Evolution 2016**, 17-21 June, Austin, TX

2016 "Comparative transcriptome-based network analysis - connecting gene expression and phenotypes of ancient and modern *Daphnia*", **ASLO Aquatic Sciences Meeting**, 5-10 June, Sante Fe, NM (D. Frisch, P. Roy Chowdhury, D. Becker, P.D. Jeyasingh, L.J. Weider and M. Wojewodzic).

2016 "Intraspecific trait variation and colonization ability in natural assemblages of zooplankton", **Ecological Society of America**, 7-12 August, Ft. Lauderdale, FL (R. Harnett and L.J. Weider).

2015 "Differential gene expression of carbonic anhydrases and local adaptation to pH in *Daphnia pulicaria*", **13**<sup>th</sup> **Annual Ecological Genomics Symposium**, 6-8 November, Kansas State U., (B.W. Culver, P.K. Morton and L.J. Weider, poster).

Presentations (continued, @ invited talk; #conference organizer):

- 2015 "Evolutionary ecology of phosphorus use in a freshwater zooplankter", Elements, genomes, and ecosystems: Cascading nitrogen and phosphorus impacts across levels of biological organization, 1-2 June, Theo Murphy Conference\*, Royal Society (U.K.) Chicheley Hall, U.K., (P.D. Jeyasingh and L.J. Weider).
- 2015 "Birds, nutrients, and climate change: Clonal diversity of arctic *Daphnia* on Svalbard revisited", **Elements, genomes, and ecosystems: Cascading nitrogen and phosphorus impacts across levels of biological organization,** 1-2 June, Theo Murphy Conference\*, Royal Society (U.K.) Chicheley Hall, U.K., (K. Alfsnes, A. Hobæk, L.J. Weider, D.O. Hessen, poster).
- 2015 "Paleogenetic records of *Daphnia pulicaria* in two North American lakes reveal the impact of cultural eutrophication", **ASLO Aquatic Sciences Meeting**, 22-27 February, Granada, Spain (D. Frisch, P.K. Morton, P. Roy Chowdhury, B. Culver, J. Muñoz, P.D. Jeyasingh, and L.J. Weider).
- 2014 "Time-after-time: Assessing ecological and genetic variation in *Daphnia* resting egg banks", **Evolution 2014**, 20-24 June, Raleigh, N.C. (L.J. Weider, D. Frisch, P.K. Morton, P. Roy Chowdhury, B.W. Culver, J. Muñoz, and P.D. Jeyasingh).
- 2014 "Time-after-time: Assessing ecological and genetic variation in *Daphnia* resting egg banks", **EMBO** *Daphnia* **Genomics Consortium Symposium**, 19-22 January, U. of Birmingham, U.K. (L.J. Weider, D. Frisch, P.K. Morton, P. Roy Chowdhury, B.W. Culver, J. Muñoz, and P.D. Jeyasingh).
- 2013 "Paleogenetic records of *Daphnia pulicaria* in two North American lakes reveal the impact of cultural eutrophication", **11**<sup>th</sup> **Annual Ecological Genomics Symposium**, 1-3 November, Kansas City, MO (D. Frisch, P.K. Morton, P. Roy Chowdhury, B. Culver, P.D. Jeyasingh, and L.J. Weider, poster).
- 2013 "Transcriptomic basis of phosphorus use physiology in *Daphnia*", **11**<sup>th</sup> **Annual Ecological Genomics Symposium**, 1-3 November, Kansas City, MO (P. Roy Chowdhury, D. Frisch, L.J. Weider, A. Ragavendran, J. Lopez, J.K. Colbourne, and P.D. Jeyasingh, poster).
- 2013 "Competitive superiority based on environmental impacts on population history: A case study in *Daphnia pulicaria*", **Evolution 2013**; 21-25 June, Snowbird, Utah (J. Muñoz, P.D. Jeyasingh, and L.J. Weider, poster).
- 2012 "Ancient and contemporary *Daphnia* genotypes differ in transcriptomic response to phosphorus supply", **10**<sup>th</sup> **Annual Ecological Genomics Symposium**, 26-28 October, Kansas City, MO ( P.D. Jeyasingh, P. Roy Chowdhury, L.J. Weider, A. Ragavendran, J. Lopez, and J.K. Colbourne).
- 2012 "Ecological genomics in a time capsule integrating RAD sequencing and resurrection ecology in the water flea, *Daphnia pulicaria*". **10**<sup>th</sup> **Annual Ecological Genomics Symposium**, 26-28 October, Kansas City, MO (P.K. Morton, D. Frisch, and L.J. Weider, poster).

**Presentations** (continued, @ invited talk; #conference organizer):

- 2012 "A millennial-scale chronicle of evolutionary responses to cultural eutrophication in *Daphnia*". **10**<sup>th</sup> **Annual Ecological Genomics Symposium**, 26-28 October, Kansas City, MO (D. Frisch, P.K. Morton, P. Roy Chowdhury, B. Culver, L.J. Weider, and P.D. Jeyasingh, poster).
- 2012 "Transcriptomic analyses of a genotype X environment interaction in two co-existing *Daphnia* genotypes". **10**<sup>th</sup> **Annual Ecological Genomics Symposium**, 26-28 October, Kansas City, MO (P. Roy Chowdhury, L.J. Weider, P.D. Jeyasingh, poster).
- 2012 "Evolution of carbonic anhydrases and their role in acid-base regulation in *Daphnia pulicaria*". **10**<sup>th</sup> **Annual Ecological Genomics Symposium**, 26-28 October, Kansas City, MO (B. Culver, P.K. Morton, and L.J. Weider, poster).
- 2012 "Clonal diversity of a *Daphnia* hybrid complex in a lake undergoing environmental change", **Evolutionary ecology and management of aquatic ecosystems**, 22-23 November, EAWAG, Dubendorf, Switzerland (D. Straile, T. Jankowski, and L.J. Weider).
- 2012 "Human impacts on evolutionary response in a *Daphnia* population observed over 1600 years". **Evolution 2012**, 6-11 July, Ottawa, Canada (D. Frisch, P.K. Morton, P. Roy Chowdhury, B. Culver, L.J. Weider, and P.D. Jeyasingh, poster).
- 2012 "Competitive superiority after ~700 years of adaptation in *Daphnia pulicaria*". **Evolution 2012**, 6-11 July, Ottawa, Canada (P.K. Morton, D. Frisch, P.D. Jeyasingh, and L.J. Weider, poster).
- 2012 "Evolution of carbonic anhydrases and their role in acid-base regulation in *Daphnia pulicaria*". **Society of Molecular Biology and Evolution (SMBE)**, 23-26 June, Dublin, Ireland (B. Culver, P.K. Morton, and L.J. Weider, poster).
- 2011 "Time traveling on the road to ecological genomics: reconstruction of temporal population genetic structure in *Daphnia* in response to environmental change". **9th Annual Ecological Genomics Symposium**, 4-6 November, Kansas City, MO, (D. Frisch, P.K. Morton, B. Culver, P.D. Jeyasingh and L.J. Weider, poster).
- 2011 "Dietary stoichiometry and the performance of *Daphnia* genotypes: transcriptomic analyses of a genotype x environment interaction". **9th Annual Ecological Genomics Symposium**, 4-6 November, Kansas City, MO, (P.D. Jeyasingh, A. Ragavendran, L.J. Weider, and J.K. Colbourne, poster).
- 2011 "Time travelling: The use of resurrection ecology to reconstruct spatio-temporal population genetic structure in *Daphnia*". **IXth International Symposium on Cladocera** 2-8 October, Verbania, *Italy* (L.J. Weider, D. Frisch, P. Morton, B. Culver, P. Roy Chowdhury and P.D. Jeyasingh.)
- 2011 "Time travelling: The use of resurrection ecology to reconstruct spatio-temporal population genetic structure in *Daphnia*". **Society for the Study of Evolution (SSE)**# 17-21 June, Norman, Oklahoma (D. Frisch, P. K. Morton, B. Culver, P.D. Jeyasingh and L.J. Weider poster).

Presentations (continued, @ invited talk; #conference organizer):

2011 "Evolution in a changing world: cultural eutrophication and the physiological response of extant and "resurrected" *Daphnia* genotypes to dietary imbalances". **Society for the Study of Evolution (SSE)**#17-21 June, Norman, Oklahoma (P. R. Chowdhury, L.J. Weider, and P.D. Jeyasingh).

2010 "Population genetic structure of the invasive freshwater cladoceran, *Daphnia lumholtzi*, in North America", **Society for the Study of Evolution (SSE)**, 25-29 June, Portland, Oregon, U.S.A. (L.J. Weider, D. Frisch, and J.E. Havel).

2009 "Population genetics and resurrection ecology: A synthesis" (*keynote address*), **Resurrection Ecology Symposium**, 13-18 September, Herzberg, Switzerland.

2009 "Spatial and temporal genetic heterogeneity of the exotic, invasive cladoceran, *Daphnia lumholtzi* in Lake Texoma, U.S.A.", **World Conference on Biological Invasions and Ecosystem Functioning (BIOLIEF)**, 27-30 October, Porto, Portugal (D. Frisch and L.J. Weider).

2009 "Long-term changes in metapopulation genetic structure: A quarter-century retrospective study on low-arctic rock pool *Daphnia*", **Society for the Study of Evolution (SSE)**, 12-17 June, U. of Idaho, Moscow, Idaho, U.S.A. (L.J. Weider, D. Frisch, and P.D.N. Hebert).

2008 "The exotic invasive cladoceran *Daphnia lumholtzi* – an example of the application of population genetic tools" , **10**<sup>th</sup> **International Conference on Copepoda**, 13-19 July, Pattaya, Thailand (D. Frisch and L.J. Weider).

2008 "Seasonal changes in the population genetic structure of the exotic invasive cladoceran *Daphnia lumholtzi*", **American Society of Limnology and Oceanography (ASLO)**, 8-13 June, Memorial University, St. John's, NFLD, Canada (D. Frisch and L.J. Weider).

2007 "The ecological genetics of the exotic invasive cladoceran *Daphnia lumholtzi*", **Fifth International Symposium on Ecological Genetics**, Belgian Fund for Scientific Research (FWO-Vlaanderen), 5-7 February, Katholieke Universiteit Leuven, *Belgium* (L.J. Weider and L.B. Harolds).

2007 "Identifying genes involved in the processing of biogenic elements in *Daphnia*", **Daphnia Genomics Consortium Meeting**, 7-9 July 2007, Indiana University, Bloomington (P.D. Jeyasingh and L.J. Weider, poster).

2007 "The ecological genetics of the exotic invasive cladoceran, *Daphnia lumholtzi*", **30th Congress of the International Society of Limnology (SIL)**, 12-18 August 2007, Montreal, Québec, Canada, (L.J. Weider, D. Frisch, and L.B. Harold).

2006 "Integration of ecology, physiology, and evolution in planktonic systems: A tribute to Winfried Lampert's contributions" (*keynote address*), **Perspectives in Aquatic Ecology: A Symposium dedicated to Prof. Winfried Lampert**, 30 September, Plön, Germany.

**Presentations** (continued, @ invited talk; #conference organizer):

2006 "Bio(genetic) diversity impacted by food quality and quantity: Competition and coexistence in a *Daphnia* clonal assemblage" **American Society for Limnology & Oceanography**, 4-9 June, Victoria, British Columbia (L.J. Weider, P.D. Jeyasingh, & K.G. Looper).

2006 "Genetic diversity effects on ecosystem function: Grazing rates in clonal versus non-clonal *Daphnia* clonal assemblages" **American Society for Limnology & Oceanography**, 4-9 June, Victoria, British Columbia (C.W. Hargrave, K.D. Hambright, & L.J. Weider).

2005 "Inter- and intra-specific coupling of growth rate and body stoichiometry in *Daphnia*: A role for maintenance processes?" **American Society for Limnology & Oceanography**, 19-24 June, Santiago de Compostela, *Spain* (M. Kyle, K. Acharya, L.J. Weider, K. Looper & J.J. Elser, poster presentation).

2004 "Genotype x environment interactions, food quality effects and clonal coexistence in *Daphnia*", **Society for the Study of Evolution**, 26-30 June, Colorado State University. (L.J. Weider, W. Makino, K. Acharya, K.L. Glenn, M. Kyle, J. Urabe & J.J. Elser).

2003 "rDNA intergenic spacer length variation and its significance for growth rates of organisms"<sup>®</sup>, NSF Integrated Research Challenges in Environmental Biology (IRCEB): Biological Stoichiometry from Genes to Ecosystems,\* Society for Integrative and Comparative Biology (SICB) Annual Meeting, 4-8 January, Toronto, Ontario, Canada.

2003 "Clonal architecture and diversity of a *Daphnia* hybrid complex in a lake undergoing environmental change", **Third International Symposium on "Ecological Genetics"**, Belgian Fund for Scientific Research (FWO-Vlaanderen), 5-7 February, Katholieke Universiteit Leuven, *Belgium* (D. Straile, T. Jankowski, and L.J. Weider).

2002 "The Role of History and Deterministic Forces in Shaping Bio(genetic) Diversity Among the Freshwater Zooplankton" (*keynote address*), **NSF-Biodiversity Symposium: Scaling Up & Down in Aquatic Systems**, Univ. of Michigan, 29 Sept. – 2 Oct.

2002 "Propagule banks as Repositories of Genetic & Ecological Information" NSF-Biodiversity Symposium: Scaling Up & Down in Aquatic Systems, Univ. of Michigan, 29 Sept. – 2 Oct.

2002 "Elemental composition, growth rates, and rDNA structure in the genus, *Daphnia*" @. **Ecological Society of America**, Univ. of Arizona, Tucson, 4-9 August, (L.J. Weider, K.L. Glenn, M. Kyle, and J.J. Elser).

2001 "rDNA spacer length, growth rates, and biological stoichiometry in the genus *Daphnia*. **Society for the Study of Evolution,** Univ. Tennessee, 26-30 June, (L.J. Weider, T.J. Crease, and J.J. Elser).

2001 "Clonal diversity in *Daphnia tenebrosa* as assessed by microsatellites", **Society for the Study of Evolution,** Univ. Tennessee, 26-30 June (F. Dufresne, L.J. Weider, and J.K. Colbourne, poster).

Presentations (continued, @ invited talk; #conference organizer):

2001 "Phylogeography in the Arctic Realm: A Circumpolar Study of the *Daphnia pulex* complex"<sup>@</sup>, **International Symposium on Ecological Genetics**, Belgian National Science Foundation, University of Antwerp, 31 January – 2 February, Antwerp, *Belgium*.

1999 "Phylogeography and Arctic Biodiversity: A Circumpolar Study of the *Daphnia pulex* Complex" (*keynote address*), **Northern Dimensions to Biodiversity: From Arctic to Boreal Ecosystems**, Finnish Academy of Sciences – FIBRE – Finnish Biodiversity Research Programme, 20-23 November, Ivalo, *Finland*.

1998 "Genetic variation in ancient cladoceran resting eggs associated with environmental shifts during the past millenium", **Society for the Study of Evolution,** 20-24 June, U. of British Columbia, *Canada* (P. Limburg, J.K. Colbourne, L.J. Weider, and J. Wiethold).

1998 "Genetic shifts in *Daphnia* diapausing egg banks: Reflection of the eutrophication history of Lake Constance?"; **International Society for Limnology (S.I.L.)**, 9-14 August, Dublin, *Ireland* (W. Lampert & L.J. Weider)

1998 "The role of diapausing propagules in influencing spatial and temporal genetic structure"<sup>@</sup>. **Ecological Genetics: Isolation by Distance,** Catholic University of Leuven, 2-3 February, Leuven, *Belgium*.

1998 "Arctic Orphans in Middle Europe: Glacial Relicts Revealed by Allozyme and RFLP Analyses of *Daphnia* from Alpine Lakes"?<sup>@</sup>, **Advances in Molecular Ecology**, NATO Advanced Study Institute, 20-31 March, Erice, Sicily, *Italy* (M. Cerny & L.J. Weider; poster).

1997 "Genetische Diversität von *Daphnia* Dauereiern im Sediment des Belauer Sees", **Deutsche Gesellschaft für Limnologie**, 15-19 September, University of Frankfurt, *Germany* (P. Limburg, J.K. Colbourne, & L.J. Weider).

1997 "Genetic diversity in ancient *Daphnia* resting eggs". **Diapause in the Crustacea: 2nd International Symposium**, 24-29 August 1997, Ghent, *Belgium*. (P. Limburg, J.K. Colbourne, L.J. Weider, W. Lampert, & M. Wessels).

1997 "Long-term genetic shifts in microcrustacean egg bank associated with anthropogenic changes in Lake Constance ecosystem." Diapause in the Crustacea: 2nd International Symposium, 24-29 August 1997, Ghent, Belgium. (L.J. Weider, P. Limburg, J.K. Colbourne, W. Lampert, & M. Wessels).

1997 "The influence of ephippial hatchlings on the clonal composition of a *Daphnia magna* population". **Diapause in the Crustacea: 2nd International Symposium**, 24-29 August 1997, Ghent, *Belgium*. (S.E. Mitchell, L.J. Weider, & G.R. Carvalho).

1997 "Genetic analysis of ephippial egg banks of *Daphnia magna* using microsatellite VNTRs". **Diapause in the Crustacea: 2nd International Symposium**, 24-29 August 1997, Ghent, *Belgium*. (C. Clabby, J.K. Colbourne, L.J. Weider, P.D.N. Hebert, & G.R. Carvalho).

Presentations (continued, @ invited talk; #conference organizer):

1996 "Apomixis, polyploidy, and the success of parthenogens in marginal habitats: A case study of arctic *Daphnia*". **Geographic Parthenogenesis: A Model System in Evolutionary Ecology**, Fifth International Congress of Systematic and Evolutionary Biology (ICSEB V), 17-23 August, Budapest, *Hungary*.

1996 "Post-glacial phylogeography of the circumarctic *Daphnia pulex* complex". **Fiftieth Anniversary of the Founding of the Society for the Study of Evolution**, 19-23 June, Washington University, St. Louis, Missouri. (J. K. Colbourne, L. J. Weider, T. J. Crease, A. Hobæk, and P. D. N. Hebert).

1995 "Biogeography and ecological genetics in an arctic apomictic *Daphnia* complex"<sup>@</sup>. **Evolutionary Genetics and Adaptation**, Jacques Monod Conference (CNRS), 25-29 September, Aussois, *France*.

1995 "Phylogeography and ecological genetics of a circumarctic apomict, *Daphnia pulex*. **Society for the Study of Evolution**, 8-12 July, Montreal, *Canada*.

1994 "Environmental heterogeneity and the maintenance of clonal diversity" Deutsche Forschungsgemeinschaft (DFG) sponsored Symposium, Interface between Ecology and Evolutionary Genetics, 30 October - 4 November, Schloß Ringberg, Germany.

# **Additional Presentations:** (@ invited talk; #conference organizer)

- 1993 Third International Symposium on Cladocera, Bergen, *Norway*
- 1993 European Science Foundation, Evolutionary Ecology of Clonal Organisms\*, Plön, Germany
- 1992 European Science Foundation, Population Biology Program, Basel, Switzerland®
- 1992 European Science Foundation, Gregynog, Wales@
- 1992 Genetics & Evolution of Aquatic Organisms, U. of Bangor, Wales
- 1991 European Society for Evolutionary Biology, Debrecen, Hungary (poster)
- 1991 Population Genetics Group Meeting, U. of Manchester, U.K. (poster)
- 1989 Society for Study of Evolution, Penn State U.
- 1987 European Society for Evolutionary, Biology, U. of Basel, Switzerland (poster)
- 1986 Ontario Ecology & Ethology Colloquium, York Univ., Canada
- 1985 Ecological Society of America (ESA), U. of Minnesota
- 1983 ESA, U. of North Dakota
- 1982 American Society of Limnology & Oceanography (ASLO), North Carolina State U.
- 1981 ASLO, U. of Wisconsin-Milwaukee

#### **Invited Lectures:**

- 2016 Department of Biology, U. of Oklahoma
- 2015 Dept. of Biological Sciences, U. of Tulsa
- 2013 School of Biosciences, U. of Birmingham, U.K.
- 2013 Dept. of Aquatic Ecology, Swiss Fed. Inst. Env. Sci., Zurich, Switzerland
- 2013 Department of Biology, Katholieke Universiteit Leuven, Belgium
- 2013 Netherlands Institute of Ecology (NIOO), Wageningen, The Netherlands
- 2013 Division of Biology, Kansas State U.
- 2012 Department of Biology, U. of Mississippi
- 2012 Department of Zoology, Oklahoma State University
- 2010 Center for Ecological & Evolutionary Synthesis (CEES), U. of Oslo, Norway
- 2009 Department of Biological Sciences, Univ. of South Carolina
- 2006 Department of Aquatic Ecology, Swiss Fed. Inst. Environ. Sci., Zürich, Switzerland
- 2005 Ecology and Evolutionary Biology Program, Michigan State University
- 2005 Department of Aquatic Ecology, Katholieke Universiteit, Leuven, Belgium
- 2004 Department of Zoology, Univ. of Oklahoma
- 2001 Department of Ecology, Univ. of Antwerp, Belgium
- 2000 Department of Animal Biology, U. of Illinois at Urbana-Champaign
- 2000 Department of Zoology, U. of Wisconsin-Madison
- 1999 Finnish Academy of Sciences, Ivalo, Finland
- 1999 Department of Zoology, Oklahoma State University
- 1999 Department of Biological Sciences, U. of Texas at Arlington
- 1999 Department of Biological Sciences, Southwest Missouri State U.
- 1998 Botanical Institute, University of Gothenburg, Sweden
- 1998 Department of Zoology, University of Oklahoma
- 1998 Zoological Institute, University of Basel, Switzerland
- 1998 Zoological Institute, Charles U., Prague, Czech. Rep.
- 1998 Institute for Polar Ecology, U. of Kiel, Germany
- 1998 Laboratory of Ecology and Aquaculture, Catholic Univ. of Leuven, Belgium
- 1997 Division of Ecology & Systematics, Cornell University
- 1997 Department of Biological Sciences, University of Hull, U.K.
- 1997 Limnological Institute, University of Constance, Germany
- 1997 Division of Biology, University of Utrecht, *The Netherlands*
- 1997 Department of Biological Sciences, Kent State University
- 1996 Institute for Marine Research, U. of Kiel, Germany
- 1995 Dept. of Biology, U. of Miami, Coral Gables, Florida
- 1995 Dept. of Limnology, Swiss Fed. Inst. Env. Sci., Zürich, Switzerland
- 1995 Dept. of Hydrobiology, Charles U., Prague, Czech. Rep.
- 1995 Department of Zoology, Oregon State University
- 1994 Dept. of Zoology, U. of Guelph, Canada
- 1994 Netherlands Institute of Ecology, Nieuwersluis, The Netherlands
- 1994 Department of Biological Sciences, SUNY-Buffalo
- 1993 Department of Animal Ecology, U. of Ghent, Belgium
- 1993 Zoological Institute, U. of Munich, Germany
- 1992 Zoological Institute, U. of Oldenburg, Germany
- 1992 Department of Ecology, U. of Turku, Finland
- 1992 European Science Foundation, Basel, Switzerland
- 1992 Division of Biological Sciences, U. of Constance, Germany

# **Invited Lectures:** (continued)

- 1991 Zoological Institute, U. of Bergen, *Norway*
- 1990 Zoological Institute, U. of Helsinki, Finland
- 1990 Dept of Zoology, Miami University (Ohio)
- 1990 Dept. of Biological Sciences, U. of Cincinnati
- 1987 Division of Biological Sciences, U. of Michigan
- 1987 Dept. of Population Biology, U. of Copenhagen, Denmark
- 1984 Dept. of Biological Sciences, U. of Windsor, Canada
- 1983 Max-Planck-Institute für Limnologie, Germany

# **Invited Symposia/Workshops:**

2018 **12**<sup>th</sup> **International Clonal Plant Symposium**, 29 July – 2 August, Bowdoin College, Brunswick, ME

2015 Elements, genomes, and ecosystems: Cascading nitrogen and phosphorus impacts across levels of biological organization, 1-2 June, Theo Murphy Conference, Royal Society (*U.K.*) Kavli International Conference Center, Chicheley Hall, Buckinghamshire, *U.K.* (note: I served as one of the lead organizers along with A. Leitch, M. Neiman, D. Hessen, P.D. Jeyasingh, and I. Leitch)

- 2013 STRESSFLEA Workshop 5-6 October, Prague, Czech Republic
- 2013 **GENOME workshop** 20-22 March, Oslo, *Norway*
- 2009 **Resurrection Ecology Symposium** 13-18 September, Herzberg, *Switzerland*.
- 2007 Centre for Ecological & Evolutionary Synthesis (CEES) Centre of Excellence (CoE) "kick-off" meeting, Research Council of Norway and Royal Society, 2-3 December, University of Oslo, *Norway*.
- 2007 **Fifth International Symposium on Ecological Genetics**, Belgian Fund for Scientific Research (FWO-Vlaanderen), 5-7 February, Katholieke Universiteit Leuven, *Belgium*.
- 2006 Perspectives in Aquatic Ecology: A Symposium dedicated to Prof. Winfried Lampert, 30 September, Max-Planck-Institut für Limnologie, Plön, *Germany*
- 2005 **Fourth International Symposium on "Ecological Genetics"**, Belgian Fund for Scientific Research (FWO-Vlaanderen), 2-4 February, University of Antwerp, *Belgium* (declined invitation to attend due to scheduling conflict.)
- 2003 **Third International Symposium on "Ecological Genetics"**, Belgian Fund for Scientific Research (FWO-Vlaanderen), 5-7 February, Katholieke Universiteit Leuven, *Belgium* (declined invitation to attend due to scheduling conflict, co-authors presented in my place).
- 2003 NSF Integrated Research Challenges in Environmental Biology (IRCEB): Biological Stoichiometry from Genes to Ecosystems, Society for Integrative and Comparative Biology (SICB) Annual Meeting, 4-8 January, Toronto, Ontario, *Canada*.

**Invited Symposia/Workshops:** (continued)

2002 **Biodiversity Symposium: Scaling Up and Down in Aquatic Systems**, NSF-sponsored Workshop, 29 Sept - 2 October, U. of Michigan, Ann Arbor, U.S.A.

2002 The Ecology and Evolution of Coupled Energy and Material Flows: Integration of Multiple Scales and Multiple Biota, Ecological Society of America (ESA)-sponsored symposium, 4-9 August, Univ. of Arizona, Tucson, USA.

2001 **Second International Symposium on "Ecological Genetics",** Belgian Fund for Scientific Research (FWO-Vlaanderen), 31 January – 2 February, Antwerp, *Belgium*.

1999 **Northern Dimensions to Biodiversity: From Arctic to Boreal Ecosystems**, 20-23 November, Ivalo, *Finland*.

1998 First International Symposium on "Ecological Genetics – Isolation-by-Distance", Belgian Fund for Scientific Research (FWO-Vlaanderen), 2-4 February, Leuven, *Belgium*.

1997 **Diapause in the Crustacea: Second International Symposium**, 24-29 August, Ghent, *Belgium*. (Selected member of the International Scientific Advisory Committee).

1996 **Geographic Parthenogenesis: A Model System in Evolutionary Ecology,** Fifth International Congress of Systematic and Evolutionary Biology, 17-24 August, Budapest, *Hungary*.

1995 **Evolutionary Genetics and Adaptation**, Jacques Monod Conference (CNRS), 25-29 September, Aussois, *France*.

1994 Interface between Ecology and Evolutionary Genetics, Deutsche Forschungsgemeinschaft (DFG) sponsored Symposium, 30 October - 4 November, Schloß Ringberg, *Germany*.

1993 **Evolutionary Ecology of Clonal Organisms Workshop**, European Science Foundation (ESF) sponsored 26-28 June, Plön, Germany (I organized this workshop).

1992 **Establishing a Program in Population Biology**, European Science Foundation (ESF) Workshop, November, Basel, *Switzerland*.

1992 **Ecology & Evolution of Metapopulations**, ESF-funded Workshop, Grygennog, *Wales*.

1989 **Future Directions in Zooplankton Population Biology**, NSF-funded workshop, October, W.K. Kellogg Biological Station, Michigan State Univ.

#### **Professional Societies**

European Society for Evolutionary Biology Society for the Study of Evolution

#### **Additional Duties:**

Serve as an *ad hoc* reviewer for: American Naturalist; Animal Behaviour; BioScience; Ecology; Ecology Letters, Evolution; Functional Ecology; Fundamental & Applied Limnology; Global Change Biology; Hereditas; Hydrobiologia; J. evolutionary Biology; Limnology & Oceanography; Molecular Biology & Evolution; Molecular Ecology; Oecologia; Oikos; Philosophical Transactions Royal Society London; Polar Research; PNAS; Proc. R. Soc. Lond.

Serve as ad hoc reviewer for NSF (U.S.), NSERC (Canada), NERC (U.K.), Marsden Fund (Royal Society of New Zealand), Canadian Foundation for Innovation (CFI), Austrian Academy of Sciences, Belgian National Science Foundation (FWO), Czech National Academy of Sciences, and Netherlands Organization of Scientific Research (NWO) Grant Proposals.

- 2019: Served as external evaluator for promotion case (McGill U.)
- 2018: Served as external evaluator for promotion case (U. of Virginia)
- 2018-2017: Served as an external international committee member Search Committee for an Aquatic Evolutionary Ecologist Professorship Institute of Ecology Research Institute for Limnology, Universität Innsbruck, Austria.
- 2018-2016: Served as lead Guest Editor (along with P.D. Jeyasingh and D. Frisch) for a special issue of **Evolutionary Applications** entitled: "Evolutionary aspects of resurrection ecology: Progress, scope and applications" (published in January 2018).
- 2017: Served as external evaluator for tenure & promotion case (U. of Wyoming)
- 2017-2016: Served as judge for the annual Hamilton (Student) Award Society for the Study of Evolution, annual meeting (Evolution 2017 Portland, OR; Evolution 2016 Austin, TX).
- 2017-2016: Served as an external international committee member Search Committee for an Evolutionary Zoologist Professorship **Department of Ecology, Biodiversity & Evolution, Universität Salzburg, Austria.**
- 2013: Served as external expert for a **NSF-sponsored strategic planning workshop** Laboratory planning at Mt. Lake Biological Station (U. of Virginia), 25-27 April 2013.
- 2012: Served as external expert for a **NSF-sponsored strategic planning workshop** Future of the Llano River Field Station (Texas Tech U.), Junction, TX, 22-24 March 2012.
- 2012-2009: Served on Domain Science & Education Coordinating Committee (DSECC) National Ecological Observatory Network (NEON) Domain #11 (Texas-Oklahoma).
- 2011: Served as **lead tri-chair** (with R. Broughton & I. Schlupp) of OU local organizing committee that **hosted the 2011 Evolution Meetings** in Norman, OK (17-21 June 2011).
- 2011: Served as invited participant for a **NSF-sponsored strategic planning workshop** for the Organization of Biological Field Stations (**OBFS**) and National Association of Marine Laboratories (**NAML**) -16-18 November 2011. Colorado Springs. CO.

# Additional Duties (continued):

2009-2008: Served as OU representative to **NEON**.

2009-2006: **Elected** as **Vice-President**, Organization of Biological Field Stations (**OBFS**); served as member of OBFS contingent for Congressional Visits Day (CVD) organized by the American Institute of Biological Sciences (AIBS), 18-19 April 2007, Washington, D.C.

2009-2005: European Society for Evolutionary Biology (ESEB) Council Member.

2008-2006: Associate Editor, Genetica.

2007: Commissioned by the Regents, University of Texas-Arlington to serve on **External Review Panel** for the Department of Biology Program, 22-23 February 2007.

2007: Served on NSF PhyloBioGeography Panel – Oct. 2007.

2006-2004: Elected as Member-at-Large, Executive Committee, OBFS.

*2006:* Commissioned by the Regents, University of Memphis to serve on **External Review Panel** for the Department of Biology Program, 6-7 April 2006

2006: Served as **external expert** for strategic planning workshop, Bull Shoals Biological Station, Missouri State University 21-22 September 2006, Springfield, MO.

*2006:* Hosted 2<sup>nd</sup> regional National Ecological Observatory Network – Texas-Oklahoma Regional Ecological Observatory (**NEON**-TOREO) meeting at OU Biological Station, 23-25 February 2006

2006-2005: Represented the **OBFS** as a member of the **NSF-sponsored** Long-Term Ecological Research (**LTER**) **Governance Working Group** (GWG).

*2005:* Served on **NSF** Doctoral Dissertation Improvement Grant (**DDIG**) Population Biology/Evolutionary Clusters **Panel**, February 2005.

2004: Served as invited participant to attend **NSF-sponsored strategic planning workshop** for OBFS, 23-25 January 2004, Sevilleta Field Station, NM.

2004: Served on **NSF** Doctoral Dissertation Improvement Grant (**DDIG**) Population Biology/Evolutionary Clusters **Panel**, February 2004.

2001: Served as member of **External Review Panel** commissioned by the Iowa Board of Regents to review and evaluate the Iowa Lakeside Laboratory Field Station, February 2001.

2001: Served as **host/organizer** for the **national meeting** of **OBFS** held at the University of Oklahoma Biological Station (UOBS), September, 2001.

# Internal (university) Service:

2022-2018 The University of Oklahoma (OU) Faculty Appeals Board

2021-2020 Weese (Endowed) Lecture Committee – Dept. of Biology

2020-2018 Chair of College of Arts & Sciences (CAS) Tenure & Promotion Committee

2019-2018 External Member - Dept. of Microbiology/Plant Biology Environmental Microbiologist search committee.

2018-2016 Elected as member of Dept. of Biology Executive Committee (Committee A).

Present-2017 National Merit Scholar liaison – Dept. of Biology

2018-2017 Member of the Ichthyologist Genomics search Committee, Sam Noble Oklahoma Museum of Natural History (SNOMNH)/Dept. of Biology

2017-2016 Member of the Mammalian Genomics search Committee, Sam Noble Oklahoma Museum of Natural History (SNOMNH)/Dept. of Biology

2017-2015: External Member - Dept. of Microbiology/Plant Biology Systems-Level Microbial Ecologist search committee.

2015 OU College of Arts & Sciences (CAS) Undergraduate Research Fair (November)

*Present-2004; 2002-1999:* Member of Dept. of Zoology/Biology Graduate Selections Committee.

Present-1999: OU Faculty Senate – Invited Speaker Program (outreach to public).

Present-2003: Member of ad hoc Departmental Committee on Molecular Core Facilities.

Present-2006: Oklahoma Center for Genomics Resources Steering Committee.

*2012-1999:* Served as *Director*, The University of Oklahoma Biological Station (UOBS): January 1999 –June 2012.

2012-2001: Ex officio member of the Executive Committee – Friends of the University of Oklahoma Biological Station (FUOBS).

2012-2005: Ex officio member of the Kessler Farm Field Laboratory (KFFL) Executive Committee.

2009-2004: Organized "Eco-Munch" seminar course/"brown-bag" (spring 2004 till spring 2009).

2007-2006: **Appointed** by the President of the University of Oklahoma to serve on the **search committee** for the endowed Case-Hooper Professorship (Zoology).

### Internal (university) Service (continued):

2006-2005: Served on Department of Zoology Strategic Planning Committee.

2006-2004: **Elected** as member of the Steering Committee for Ecology & Evolutionary Biology (EEB) Ph.D. Program; Dept of Zoology/Botany/Microbiology.

2004-2002: Elected as member of Dept. of Zoology Executive Committee (Committee A).

2004: Hosted a "Golden Alga (Prymnesium parvum) Task Force Meeting between Oklahoma Department of Wildlife Conservation (ODWC) and Texas Parks and Wildlife (TPW) officials, held at The University of Oklahoma Biological Station, 18 March 2004.

2003-1999: Faculty Mentor for the OU Ultimate (Frisbee) Club.

2002: **Appointed** by the OU Board of Regents to serve on the *search committee* for the new Director, Sam Noble Oklahoma Museum of Natural History.

2002-2000: **Appointed** as member of the OU College of Arts & Sciences (CAS) Tenure and Promotion Advisory Committee.

2002-2000: Served on Dept. of Zoology search committee – new departmental Chair.

2002-2001: Served on Dept. of Botany/Microbiology Molecular Ecologist search committee.

2001-1999: Member of OU Steering Committee for the Development of an Interdisciplinary Center for Global Environmental Studies

2001: Served as member of ad hoc Committee to establish an inter-departmental Ph.D. Program in Ecology and Evolutionary Biology (EEB).

2000-1999: Member of the OU College of Arts & Sciences Environmental Biology Task Force.

2000-1999: OU Freshmen Mentoring Program.

2000-1999: Search Committee Member: Aquatic Ecologist position (Biological Station/Zoology).

2000-1999: Search Committee Member: Invertebrate Biologist position (Biological Survey - Zoology).

### Public (non-academic) Lectures/Service:

2019 Oklahoma Science Fest, Oklahoma City OK (May) – "Life in a Pond" (4<sup>th</sup> & 5<sup>th</sup> graders)

2017 Served as an interview expert for *Chemical & Engineering News* on a special feature article related to "sentinel organisms" (including our primary study organism, *Daphnia*). 20 November 2017 issue: https://cen.acs.org/articles/95/i46/meet-the-sentinels.html

2017 Our work was featured in an article in *New Scientist* Magazine (online issue 17 May 2017; print issue 20 May 2017 issue) – "Wakey, wakey – Zombie creatures that have been resurrected…" https://www.newscientist.com/article/mg23431260-400-wakey-wakey/

2017 Oklahoma Science Fest, Oklahoma City OK (May) – "Life in a Pond" (4<sup>th</sup> & 5<sup>th</sup> graders)

2017 Sam Noble Oklahoma Museum of Natural History (SNOMNH) Volunteers "Brown Bag" (April)

2016 Oklahoma Science Fest, Oklahoma City OK (April) – "Life in a Pond" (4<sup>th</sup> & 5<sup>th</sup> graders)

*Present-2015* Our NSF-funded research on "resurrection ecology" is highlighted by the award-winning SCIENCE BUZZ project at the Science Museum of Minnesota (SMM) via both on-line resources, and a "resurrection ecology kiosk".

http://www.sciencebuzz.org/topics/resurrection-ecology-bringing-past-back-life

2015 SNOMNH Volunteers "Brown Bag" (May)

2015 Oklahoma Science Fest, Oklahoma City OK (April) – "Life in a Pond" (4<sup>th</sup> & 5<sup>th</sup> graders)

2014 Woodson Park Senior Center, Oklahoma City OK (August)

2014: Press/Public interviews related to Frisch et al. (2014) **Ecology Letters** paper:

NY Times: <a href="http://www.nytimes.com/2014/01/09/science/a-living-time-capsule-shows-the-human-mark-on-evolution.html">http://www.nytimes.com/2014/01/09/science/a-living-time-capsule-shows-the-human-mark-on-evolution.html</a>? r=0

Minnesota Public Radio: <a href="http://www.mprnews.org/story/2014/01/10/science/resurrection">http://www.mprnews.org/story/2014/01/10/science/resurrection</a>
Oklahoma News Channel 9: <a href="http://www.newson6.com/story/24421055/700-year-old-eggs-hatch">http://www.newson6.com/story/24421055/700-year-old-eggs-hatch</a>

2012: Trinity Lutheran Seniors Group, Norman OK (October).

2011-2003: Friends of the University of Oklahoma Biological Station (FUOBS) – Biennial Reunion ("State-of-the-Station", July 2003, July 2005, Oct 2007, Oct 2009, Oct 2011).

2008: FUOBS Fall Reception, Sam Noble Oklahoma Museum of Natural History (October).

2007: Paul's Valley (OK) Rotary Club (July).

2006: Bridge Creek (OK) Middle School Gifted & Talented Program (November).

2006: FUOBS Spring Reception, Sam Noble Oklahoma Museum of Natural History (April).

### Public (non-academic) Lectures/Service: (continued)

2005: Volunteer chaperone for Alcott Middle School's Lake Thunderbird "Lake Studies" (September).

2005: Noble (OK) High School Gifted & Talented Program (February).

2004: Rivermont Retirement Community - Norman, OK (October).

2004: Volunteer chaperone for Alcott Middle School's "Sutton Urban Wilderness Expedition" (March).

2003: Presented FUOBS award at the Oklahoma Junior Academy of Sciences (OJAS) Banquet (April 2003, East Central University, Ada, OK).

2003: Marshall County Retired Educators - (June).

2003: OU Alumni & Friends of Love County, OK – (April).

2003: Madill Lions' Club - (February).

2003: Madill Daughters – (January).

2003-2001: OU Pre-Collegiate Summer Academy (June 2001, June 2002, June 2003)

2002: Sea Scouts (Norman ship#5790) - (September).

2002: Upward Bound (disadvantaged high school students) – S.E. Oklahoma State Univ. (July).

2000: OU Interdisciplinary Perspectives on the Environment (IPE) – invited speaker (November).

2000: Lindsay (OK) Rotary Club (October).

2000: Oklahoma City/Central Oklahoma Mensa Chapter (June).

2000: Volunteer chaperone for Alcott Middle School's "Sutton Urban Wilderness Expedition" (March).

2000: Kingston (OK) Middle School Science Fair Judge (February).

2000: Blanchard (OK) High School Gifted & Talented Program (February).