

# Tanya Dapkey

## **EDUCATION**

### **University of Pennsylvania, Philadelphia, PA**

Master's degree in Environmental Studies, Environmental Biology Concentration

*May 2009*

Capstone: Combining DNA Barcoding and Macroinvertebrate Sampling to Assess Water Quality

### **West Chester University, West Chester, PA**

Bachelor of Science degree in Biology

*December 2003*

Focus on aquatic ecosystems and entomology

## **EMPLOYMENT**

### **Academy of Natural Sciences, Patrick Center for Environmental Research, Philadelphia, PA**

*August 2019 - present*

#### **Lab Manager**

- Watershed Ecology Section
- Supervise Drexel Co-op students and volunteers
- Manage and troubleshoot research laboratory
- Project Manager for "Headwaters of the Delaware River"
- Data Products for the DRWI Team Coordinator
- Field Work collecting macroinvertebrates, biogeochemistry metrics, algae samples and habitat assessments
- EPT (East) Taxa Certification January 2022

### **University of Pennsylvania, Philadelphia, PA**

*September 2004 – August 2019*

#### **Research Technician**

- Barcode of Life Initiative, Lepidoptera of the ACG project
- Prepare DNA tissue samples for lysis, create and maintain databases for Janzen website
- Curate voucher specimens for Costa Rican biodiversity inventory
- Supervise Work-Study students and Volunteers
- Manage and troubleshoot research laboratory
- Created and update Janzen Lab Technician SOP
- Administrative Assistant to Dr. Daniel Janzen
- Initiated iNaturalist [webpage](#) for the Guanacaste Conservation Area

### **University of Pennsylvania, Philadelphia, PA**

*July 2015 – present*

#### **Entomologist**

- Prepare, photograph, and slide mount genitalia of DNA barcoded species of Lepidoptera (Crambidae, *Hahncappsia*)
- Describing Lepidoptera species and preparing publications for those newly described species

**Let's Go Outdoors, Philadelphia, PA**

*August 2016 – 2018*

**Insect Educator**

- Educate grade school age children on entomology, ecology, and nature

**WyzAnt Tutoring, Levittown, PA**

*January 2016 – June 2016*

**Tutor**

- Tutor High School students in biological sciences
- Prepare lesson plans, administer work sheets and practice exams

**University of Pennsylvania, School of Liberal and Professional Studies, Philadelphia, PA**

*September 2012 – March 2013*

**Entomologist**

- Identify freshwater macroinvertebrates for students in the MES program, College of Liberal and Professional Studies
- Utilized barcoding techniques to sample macroinvertebrates for species level identification
- Second reader for Capstone projects with entomological aspects

**Stroud Water Research Center, Avondale, PA**

*May 2005 to August 2005*

**Entomology Intern**

- Processed stream samples for Streamwatch Project 2005
- Utilized a dissecting scope to sort and identify insects to family
- Responsible for analyzing and presenting results to staff at Stroud
- Field work on the last year of the New York City water quality monitoring project

**University of Pennsylvania, Philadelphia, PA**

*May 2002 to August 2002*

**Research Assistant for Dr. Eric Weinberg**

- Genetic research of various zebra fish mutations, as relates to auditory development
- Performed PCR amplifications, gel electrophoresis, embryonic dechoriation
- Daily feeding of fish, tank cleaning, water quality testing

**Springfield Animal Hospital, Springfield, PA**

*August 1999 to June 2004*

**Veterinary Technician Assistant**

- Trained in x-ray and autoclave equipment operations
- Administer intravenous, subcutaneous and intramuscular medication
- Trained to take blood samples and place an IV
- Additional administrative duties

**Heart Recovery Service, Springfield, PA**

*August 1997 to August 1999*

**Assistant to the Vice President of Operations**

- Managed and organized the schedule and daily activities of the Vice President of Operations
- Assisted in the research and creation of the employee benefit program
- Supervised automotive transport

## **SKILLS**

**Field Work** – Surber Sampler, Kick Net, YSI, flow tracker, Habitat Assessments

**Computer Skills** - Microsoft Office, File Maker Pro, Adobe Photoshop, Apple & Windows OS proficient

**Entomology** - Insect collection techniques (i.e. pinning, spreading, labeling, sorting), genitalia dissection, staining and photography, slide mounting, barcoding techniques including tissue sampling, lysis plate preparations, database management

**Personal Interests** - Photography, insect collecting, gardening

## **PROFESSIONAL DEVELOPMENT**

- Member of the Society for Fresh Water Science, 2020, 2021
- Member of the American Entomological Society, 2013 to 2021
- 2021 Upper Delaware Bioblitz, Committee member, Entomologist
- National Moth Week entomologist and organizer, 2015-2021
  - 2021 Upper Delaware Bioblitz Moth Night
  - 2020 Private Moth Night
  - 2015-2019, Moth Night at Hildacy Farm Preserve, Media, PA
- 2018 MANTIZ BioBlitz, Historic Whitesbog Village, MANTIZ Board Member, BioBlitz Planning team, Entomologist, July 28-29, 2018
- 2018 Upper Delaware BioBlitz, June 29-30, 2018, Entomologist
- 2017 MANTIZ BioBlitz, Green Lane Park, Entomologist, June 23, 2017
- 2016 National Parks BioBlitz, Hopewell Furnace, Entomologist, May 20<sup>th</sup>, 2016
- Valley Forge National Park BioBlitz, Entomologist, May 2014
- Attended Schuylkill Watershed Congress 2007, 2009, 2010, 2013, 2020
- Second Reader for University of Pennsylvania LPS students' Capstone projects
  - 2013, James Knighton, "Random Walk Modeling of Adult *Leuctra ferruginea* (Stonefly) Dispersal"
  - 2014, Jia Xu, "Insects as Feed or Food: A Sustainable Nutrient Source?"

## **Public Talks**

- 2021 BugFest, Academy of Natural Sciences, "Academy Conversations, Insects in Decline" August 14<sup>th</sup>
- 2020 Digital BugFest, Academy of Natural Sciences, Online, "Moth Night with Tanya Dapkey"
- 13<sup>th</sup> Annual Member's Week, Academy of Natural Sciences, Online, "Macroinvertebrate Monitoring & Lab Tour"
- American Entomological Society Monthly Meeting, University of Delaware, "Barcoding the tropics" October 2019
- Saturday Speaker Series, Science History Institute, Philadelphia, PA, "Women in Ecology" October 12, 2019
- Keystone Speaker Penn State Brandywine Commission for Women, Women In STEM "Finding Myself and

Doing Good Works with 500 Women Scientists” March 12, 2019

- Saturday Speaker Series, Science History Institute, Philadelphia, PA, “How to Build an Insect Database” June 9, 2018

### Interviews

- [“In a Cockroach Genome, ‘Little Mighty’ Secrets”](#) March 20, 2018. Interview with NY Times journalist Steph Yin.
- [“Life With No Males? These Termites Show That It’s Possible”](#) September 28, 2018. Interview with NY Times journalist Steph Yin.
- [“Do Mosquitoes Feel the Effects of Alcohol?”](#) March 14, 2019. Interview with BBC future journalist Stephen Dowling.

### Educational Outreach

- Academy of Natural Sciences, Entomologist
  - Member’s Night October 2019
  - Back to the Field November 2019
  - MLK Day January 2019
  - Research Day March 2021
  - BugFest August 2020 and August 2021
- Skype a Scientist Participant, 2017-2020
- Letters to a Pre-Scientist Participant, 2018-2020
- Neshaminy STEAM Expo, 2018, 2019, 2021
  - Entomologist
- Penn Alexander School, Philadelphia PA 4<sup>th</sup> and 5<sup>th</sup> Grade Science Fair judge 2017-2018
- Girl Scouts of America, Bug Badge educator
  - Bensalem Troop 2099, October 2017
  - Levittown Troop 2085 April 2018
- Cheltenham Elementary School, Women and Girls in Science Fair, May 2014, 2015, 2016, “Women in Entomology”
- Insect Day Educator
  - Albert Schweitzer Elementary School, Levittown, PA March 8<sup>th</sup>, 2016, April 7, 2017, May 18, 2018, March 29, 2019
  - Makefield Elementary School, Yardley, PA June 19, 2018
  - Primos Elementary School, Primos, PA April 30, 2015, March 19<sup>th</sup>, 2016
  - Samuel Everitt Elementary School, Levittown, PA, April 17, 2015
  - A Child’s World Daycare center, Langhorne, PA, April 2013

### Courses and Workshops

- Eagle Hill Institute Summer Course “EPT with Dr. Steven Burian” August 2019
- Temple University Symposium, “Science Communication: How we do it. How we can improve.” April 10, 2019
- 500 Women Scientists Mid-Atlantic Regional Policy Meeting, March 3, 2019
- National Girls Collaborative Project, “National Mentoring Month: Strategies for Mentoring Girls in STEM”, January 24, 2019
- Union of Concerned Scientists National Legislation’s Climate Advocacy Training, Philadelphia, PA,

February 10, 2018

- Climate Change Science, Communication, and Action, Online course by Cornell Institute for Climate Smart Solutions, Certification Received September 2017.
- Entomological Society of America Webinar “How to Take Better Insect Photographs with Any Camera” by Alex Wild, April 29, 2015
- Words at Work, taught by Janet Falon March 2012

## **RESEARCH**

### **Research Interests**

Entomology, DNA barcoding, fresh water ecosystems, insects as bio-indicators of environmental deviations

### **Research Activities –**

*Research Day, Academy of Natural Sciences, December 2020.*

“Co-ops & COVID: Training & Engaging Students Virtually” Presented by Tanya Dapkey and Naomi Wilson.

*American Geophysical Union, Fall Meeting 2018, Washington, D.C.*

“From 5 to 500 to 50,000 – Women Scientists Rise Up” Poster Session. Zelikova, Jane, et. al., including Tanya Dapkey. Presented by Jane Zelikova.

*Start Talking Science, Philadelphia, PA September 28<sup>th</sup>, 2017*

“Identifying Costa Rican Moths & Butterflies Using DNA Barcoding.” Paper: “Nuclear genomes distinguish cryptic species suggested by their DNA barcodes and ecology.” Janzen, Daniel, et. al., including Tanya Dapkey. 2017. PNAS DOI 10.1073/pnas.1621504114. Presented by Tanya Dapkey

*NABS 2010 Conference, Santa Fe, New Mexico, May 6-11, 2010*

Sweeney, B.W., T. Dapkey, J.K. Jackson, D.H. Funk and J.M. Battle. 2010. Paper: “Macroinvertebrate assessment of water quality in White Clay Creek based on specimens identified by amateurs, professionals, and barcoding”. North American Benthological Society. Presented by Bern Sweeney.

*Schuylkill Watershed Congress, Montgomery County, PA, March 7, 2009*

"Combining DNA Barcoding and Macroinvertebrate Sampling to Assess Water Quality" Presented by Tanya Dapkey

*NABS 2009 Conference, Grand Rapids, Michigan, May 18, 2009*

*Special Session - Environmental Barcoding: Genomic Solutions for Biomonitoring*

"Macroinvertebrate assessment of water quality in White Clay Creek based on specimens identified by amateurs, professionals, and barcoding" Presented by Bern Sweeney

*Consortium for the Barcode of Life International Conference, Mexico City, Mexico. November 11, 2009*

Keynote address: "Water quality analysis with macroinvertebrate barcoding." Presented by Bern Sweeney

## **PUBLICATIONS**

- Sharkey, M.J., et. al., including Tanya Dapkey. (2021). Minimalist revision and description of 403 new species in 11 subfamilies of Costa Rican braconid parasitoid wasps, including host records for 219 species. *ZooKeys* 1013(4):1-665. DOI: 10.3897/zookeys.1013.55600
- Fleming, A.J., et. al., including Tanya Dapkey. (2020). Revision of *Telothyria* van der Wulp (Diptera: Tachinidae) and twenty-five new species from Area de Conservación Guanacaste in northwestern Costa Rica with a key to Mesoamerican species. *Biodiversity Data Journal* 8(4). DOI: 10.3897/BDJ.8.e47157.
- Fleming, A.J., et. al., including Tanya Dapkey. (2020). A new genus and new species in the tribe Uramyini (Diptera: Tachinidae) from Area de Conservación Guanacaste in northwestern Costa Rica. *Biodiversity Data Journal* 8:48907. DOI: 10.3897/BDJ.8.e48907.
- Solis, M.A., et. al., including Tanya Dapkey. (2020). *Asturodes* Amsel (Lepidoptera: Crambidae: Spilomelinae): Three New Species from the Western Hemisphere and Food Plant Records from Area de Conservación Guanacaste, Costa Rica. *Proceedings- Entomological Society of Washington* 122(1):147. DOI: 10.4289/0013-8797.122.1.147
- Fleming, A.J., et. al., including Tanya Dapkey. (2019) A new species of *Trismegistomyia* Reinhard (Diptera: Tachinidae) from Area de Conservación Guanacaste in Northwestern Costa Rica. *Biodiversity Data Journal*. 7. DOI: 10.3897/BDJ.7.e29130
- Fleming, A.J., et. al., including Tanya Dapkey. (2019). Twenty-two new species in the genus *Hyphantrophaga* Townsend from Area de Conservación Guanacaste and a key to the species of Mesoamerica. *Biodiversity Data Journal*. 7:e29553. DOI: 10.3897/BDJ.7.e29553
- Fernandez-Triana, Jose, et. al., including Tanya Dapkey. (2019). A revision of *Dolichogenidea* (Hymenoptera: Braconidae, Microgastrinae) with second mediotergite broadly rectangular from Area de Conservación Guanacaste, Costa Rica. *ZooKeys* 835(1):87-123. DOI: 10.3897/zookeys.835.33440
- Goldstein, Paul Z., et. al., including Tanya Dapkey (2018) A review of *Leucosigma* Druce, 1908: a newly discovered case of fern-feeding and descriptions of three new species (Lepidoptera, Noctuidae) *ZooKeys* 788(3): 87-133. DOI: 10.3897/zookeys.788.21222
- Goldstein, Paul Z., et. al., including Tanya Dapkey (2018) Review of *Lophomyra* Schaus, 1911 (Lepidoptera, Noctuidae): a new combination and re-descriptions of species newly associated with ferns (Polypodiaceae). *ZooKeys* 788: 135-165. DOI: 10.3897/zookeys.788.21235
- Kang, I., et. al., including Tanya Dapkey. (2017) Revision of the species of *Lytopylus* from Area de Conservación Guanacaste, northwestern Costa Rica (Hymenoptera, Braconidae, Agathidinae). *ZooKeys* 721: 93-158. doi: 10.3897/zookeys.721.20287
- Fleming A., et. al., including Tanya Dapkey. (2017) Five new species of *Vibrissina* Rondani (Diptera: Tachinidae) from Area de Conservación Guanacaste in Northwestern Costa Rica. *Biodiversity Data Journal* 5: e109967. DOI: 10.3897/BDJ.5.e10967

- Fleming A., et. al., including Tanya Dapkey. (2017) A new species of *Voria* Robineau-Desvoidy (Diptera: Tachinidae) from Area de Conservación Guanacaste in northwestern Costa Rica. *Biodiversity Data Journal* 5: e20123. doi: 10.3897/BDJ.5.e20123
- Chacón, Isidro A., et. al., including Tanya Dapkey. (2017) Six new cryptic species of *Xylodonta* Becker, 2014 (Notodontidae: Nystaleinae) from Costa Rica. *Tropical Lepidoptera Research*. 27(1): 33-58.
- Janzen, D.H., et. al. including Tanya Dapkey. (2017) Nuclear genomes distinguish cryptic species suggested by their DNA barcodes and ecology. *Proceedings of the National Academy of Sciences of the United States of America*. 114(31): 8313-8318. doi: 10.1073/pnas.1621504114
- Fleming A., et. al., including Tanya Dapkey. (2017) Nine new species of *Uramya* Robineau-Desvoidy (Diptera: Tachinidae) from Area de Conservación Guanacaste in northwestern Costa Rica, with a key to their identification. *Biodiversity Data Journal* 5: e9649.
- Fernandez-Triana, Jose, et. al., including Tanya Dapkey. 2016. Review of the world species of *Exoryza* (Hymenoptera, Braconidae, Microgastrinae), with description of five new species. *Deutsche Entomologische Zeitschrift* 63(2): 195-210 (01 Aug 2016). <https://doi.org/10.3897/dez.63.8977>
- Fernandez-Triana, Jose, et. al., including Tanya Dapkey. 2016. Revision of the genus *Promicrogaster* (Hymenoptera, Braconidae, Microgastrinae) from Area de Conservación Guanacaste, Costa Rica, with a key to all species previously described from Mesoamerica. *Journal of Hymenoptera Research* 50: 25-79.
- Fleming, A.J., et. al., including Tanya Dapkey. 2016. Two new species of *Erythromelana* Townsend, 1919 (Diptera: Tachinidae) from Area de Conservación Guanacaste in northwestern Costa Rica. *Biodiversity Data Journal* 4: e7386. DOI: 10.3897/BDJ.4.e7386.
- Fleming, A.J., et. al., including Tanya Dapkey. 2016. A new species of *Phosocephala* Townsend, 1908 (Diptera: Tachinidae) from Area de Conservación Guanacaste in northwestern Costa Rica. *Biodiversity Data Journal* 4: e7863. DOI: 10.3897/BDJ.4.e7863.
- Knighton, James, Tanya Dapkey and Jason Cruz. 2014. Random Walk Modeling of Adult *Leuctra ferruginea* (Stonefly) Dispersal. *Ecological Informatics*. 19: 1-9.
- Sweeney, Bern, et. al. including Dapkey, T. 2011. Can DNA barcodes of stream macroinvertebrates improve descriptions of community structure and water quality? *Journal of the North American Benthological Society*. 30(1): 195-216.
- Sharkey, Michael J., et. al. including Tanya Dapkey. 2011. *Lytopylus* Forster (Hymenoptera, Braconidae, Agathidinae) species from Costa Rica, with an emphasis on specimens reared from caterpillars in Area de Conservación Guanacaste. *ZooKeys*.130: 379-419.
- Janzen, D.H., et. al. including Tanya Dapkey. 2009. Observations on the integration of DNA barcoding into an ongoing inventory of tropical complex biodiversity. *Molecular Ecology Resources*. 9(1): 1-26.

## **VOLUNTEER EXPERIENCE**

### **500 Women Scientists, Philly Pod, 2016-present**

Co-founder and co-leader of the Philly Pod. Develop educational outreach programs, plan events, maintain social media (Facebook, Twitter, Google Groups), marketing, fund raising, and outreach. Develop tabling activities for large STEM events like The Philadelphia Science Festival. Entomology education and presentations.

### **500 Women Scientists, Leadership Board, November 2017-March 2020**

SciMom Journey and Pod Coordinating Team Leader from 2017 to 2020, responsible for regular check-ins and communications with Global Pod network. Developed Regional organization for local charters within the United States. Wrote the SOP for local charters and organize resources for local charters. Assisted in development of [#SciMomJourney](#) which focuses on the challenges and solutions for working mothers in the sciences. Wrote [March 19, 2019](#), [March 5th, 2019](#), [February 5th, 2019](#), [October 23, 2018](#), [October 2, 2018](#), [August 14, 2018](#) Take Action Tuesday Posts.

### **Boy Scouts of America, Cub Scout Pack 316, 2016-2019**

Den Leader, Webelos, Wolf and Bear Dens, Cub Master, 2017-2019.

### **Snipes Farm and Education Center, Morrisville, PA, 2014, 2015, 2016 and 2017 growing season (May-Nov.)**

Participated in the work share program for CSA members by washing 2 dozen eggs once a week. Created a toddler insect explore outing, and led a nature walk.

### **Kool Kids Consignment Sale, Bucks County, PA, March 2012 through October 2014**

Helped set up sales floor, organized racks, and assisted customers.

### **Schuylkill Valley Wildlife Clinic, Conshohocken, PA, August 2001 through January 2003**

Trained by the Pennsylvania Game Commission to handle Rabies Vector Species, vaccinated for rabies 2002, titer 1:500 as of 3/06, knowledgeable in the care and handling of Pennsylvania wildlife (avian, reptile, mammals)

### **Tutoring, St Cyril of Alexandria School, East Lansdowne, PA 2003-2005**

Tutor grades 4-7 on basic scientific principles, utilizing visual and comprehensive learning techniques. Introduction to conservation, biodiversity and evolution

### **Research Assistant, West Chester University, West Chester, PA, March 2002 to May 2003**

Assist Ecology Graduate Student, Jim Stanford, Salamander population density surveys, Water quality sampling, GPS mapping



## **WEBSITES**

LinkedIn Profile: [www.linkedin.com/pub/tanya-dapkey/11/5b0/897](http://www.linkedin.com/pub/tanya-dapkey/11/5b0/897)

Research Gate: [https://www.researchgate.net/profile/Tanya\\_Dapkey](https://www.researchgate.net/profile/Tanya_Dapkey)

Personal Websites: <http://www.tanyadapkey.com/>, <http://xandersmom.smugmug.com/Entomology-by-Tanya>

500 Women Scientists gage. profile: <https://gage.500womenscientists.org/profile/6>

## **REFERENCES**

References, letters of recommendation and transcript copies available upon request.