

XXXVIII Annual Meeting of the Willi Hennig Society
University of California, Berkeley
May 26th –May 31st, 2019



meeting logo by Jenna Ekwealor

Organizing committee:

Brent Mishler
Kipling Will
Sonia Nosratinia

Sponsored by the Berkeley Natural History Museums :

University and Jepson Herbaria
Museum of Vertebrate Zoology
Essig Museum of Entomology
University of California Museum of Paleontology



Most of the meeting will take place at the Clark Kerr Campus (CKC -- see map below). All talks are in Krutch Theater in the conference center (building 14).

Tuesday afternoon events will be on the main campus in the Valley Life Sciences Building (VLSB), in the *T. rex* lobby in the center of the building on the first floor. VLSB is a 15 minute walk from the CKC (see campus map on next page). There are many places to eat lunch on the way, along College Ave, Bancroft Way, Durant Ave, and Telegraph Ave.

Breakfast and lunch are provided (in the Clark Kerr Executive Dining Room) for people staying at CKC. The closest places for lunches for other participants are on College Ave (3 blocks west of CKC) or in the vicinity of the grand Victorian Claremont Hotel (3 blocks south of CKC). Places within this three-block radius include:

Sack's Coffee House <http://themenupage.com/sacks/index.html>

Station Burgers <http://thestationburgerberkeley.com/>

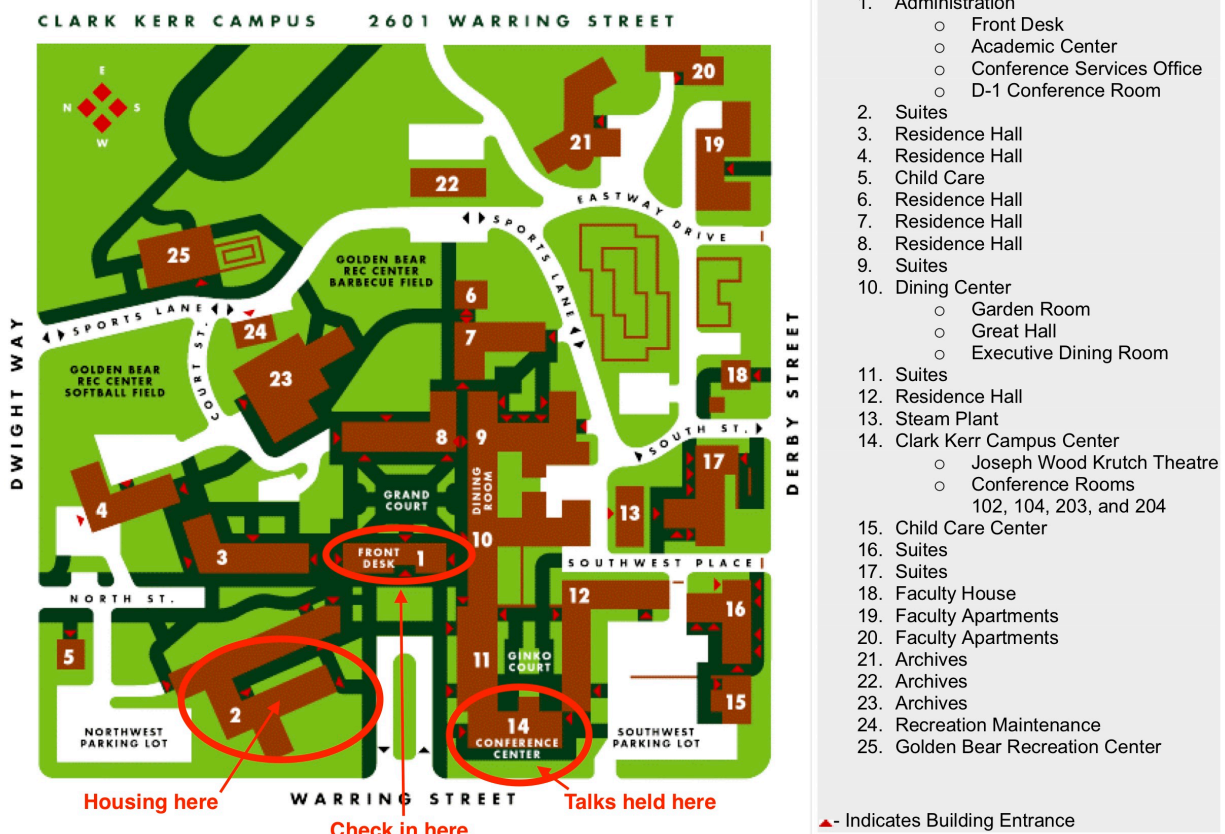
Rick & Ann's <http://www.rickandanns.com/>

Fournée Bakery <https://www.fourneebakery.com/>

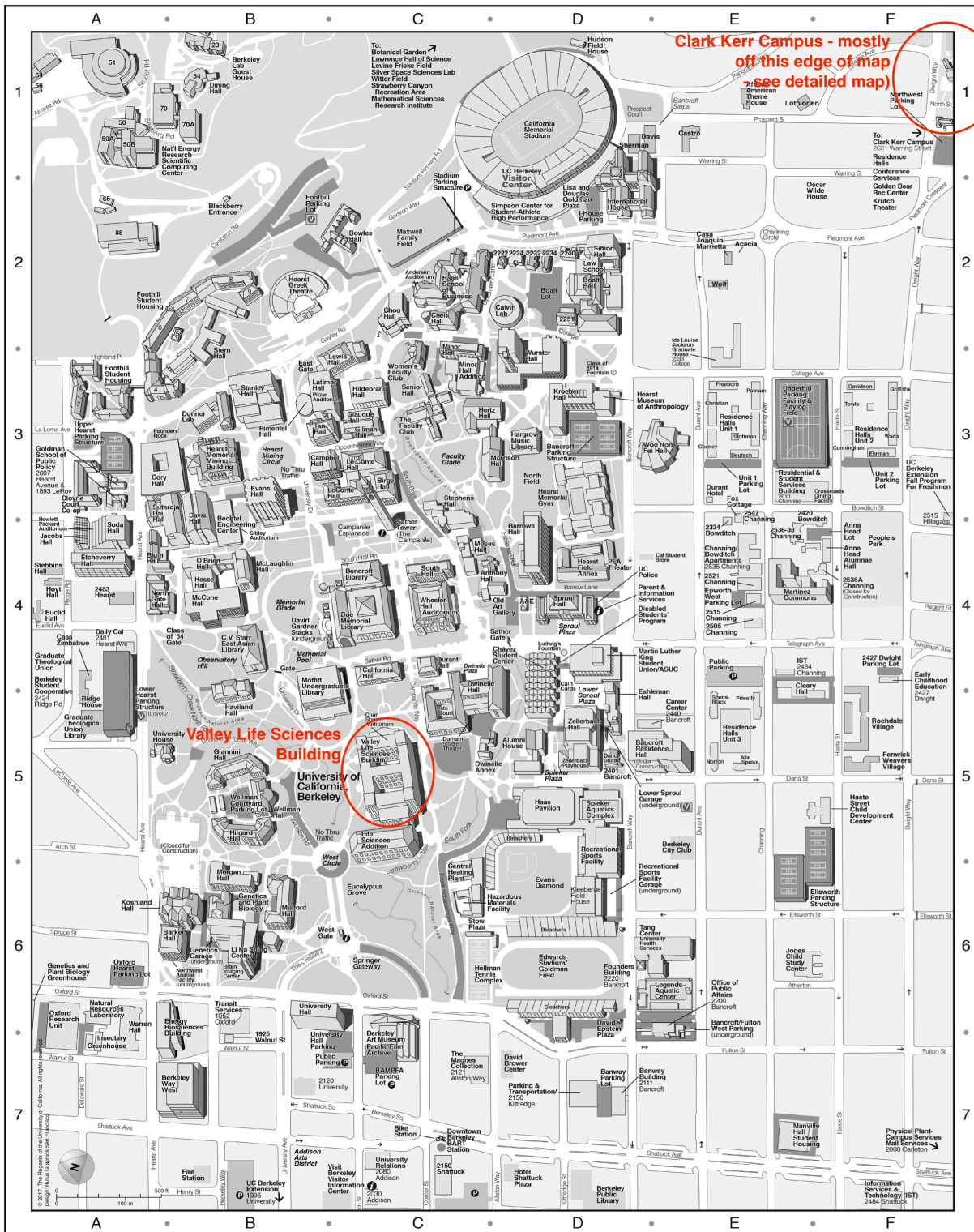
There are many more lunch places if you walk a little further, e.g, to the area around the intersection of College Ave. and Ashby Ave.

Berkeley has many places for dinner. A list of restaurants and drinking spots is here: <https://www.visitberkeley.com/food-drinks/restaurants/>

Map of Clark Kerr Campus showing housing and meeting locations:



UC Berkeley campus map showing the two meeting venues.



Meeting Program

- All contributed talks are limited to 12 minutes.
- All symposium talks are limited to 20 minutes with a few exceptions noted below.
- Please keep your talks inside these limits.

Note that all five symposia were organized by grad students and postdocs, who have done well to create a cutting-edge, diverse set of talks.

* = student presentation.

Sunday May 26th

Arrival; registration table at the Clark-Kerr housing reception desk 4:00 - 7:00.

Two-hour catered welcome reception 5:00 - 7:00 pm in Garden Room, Clark-Kerr Campus.

Monday May 27th

AM: Session 1. **Symposium on "Phylogenomic Analysis"**

9-12:10 with 20 minute break

Organizer: Alexander Knyshov, post-doc, University of California Riverside

9:00 Tandy Warnow (keynote: 40 minute talk) - **Advances in methods for large-scale multi-locus species tree estimation**

9:50 Mark Springer- **Homology in the age of phylogenomics**

10:20 *Break*

10:40 Stephen Smith - **Phylogenomic heterogeneity and attempts to identify noise and signal in evolution**

11:10 Princess Gilbert - **Quantitative analysis of phylogenetic informativeness, signal and noise in ultraconserved elements within Percomorpha and Neoaves**

11:40 Alexander Knyshov - **Exploring data manipulation strategies in phylogenomic analysis of assassin bugs (Insecta: Hemiptera: Heteroptera: Reduvioidea)**

12:10-1:30 *lunch*

PM: Session 2. **Contributed papers** 1:30-2:45. Brent Mishler, chair

1:30 John Heraty - **Transcriptomes, chalcidoid wasps and conflicting phylogenetic signals**

1:45 James Pflug - **Combining transcriptomes, genomes, and target capture data to investigate the deep nodes of the Bembidiini (Coleoptera: Carabidae) phylogeny**

* 2:00 Ambrosio Torres - **Gene tree incongruence is a major predictor of the differences between parsimony and maximum likelihood in phylogenomics**

2:15 Matthew Van Dam - **Incorporating functional genomics into UCE phylogenomics**

2:30 Christiane Weirauch - **Integrating phylogenomic and morphological data to revise the true bug classification (Hemiptera: Dipsocoromorpha and Reduvioidea)**

2:45 *Break*

Monday May 27th (cont.)

Session 3. **Symposium on "Phylogenetics and Evolution in the Fossil Record"**

3:00-5:30 with 10 minute break

Organizers: Camilla Alves Souto, post-doc, and Daniel Varajão de Latorre, grad student, University of California Berkeley

3:00 Charles Marshall (keynote: 30 minute talk) - **The significance of differences between molecular phylogenies and the fossil record when trying to infer the diversity dynamics of the living biota**

- * 3:40 Caroline Parins-Fukuchi - **A likelihoodist view on characters, model parsimony, and principled phylogenetic analysis in paleobiology**

4:10 Break

4:20 Katie Davis (keynote: 30 minute talk) - **Phylogeny, speciation & environmental change through deep time**

5:00 Jyrki Muona - **Morphological and molecular data set contradiction - fossils decide?**

even: open for independent socializing/dinner

Tuesday May 28th

AM: Session 4. **Symposium on "Phylogenetic Approaches in Microbiome Research"**

9-12:30, with 10 minute break

Organizers: Aman Gill, post-doc; Allan Cabrero, grad student, University of California Berkeley

9:00 Albert Barberan (keynote: 40 minute talk) - **Microbial phylogenetic macroecology: a pioneering necessity**

9:50 Rita De Cassia Pessotti - **Investigating the semi-social beetle *Odontotaenius disjunctus* as a model for microbial chemical ecology studies**

10:20 Ricardo Eloy Alves - **Unifying the global phylogeny and environmental distribution of ammonia-oxidizing archaea based on amoA genes**

10:50 Break

11:00 Gordon Bennett - **Down the rabbit-hole: origins and co-evolution of obligate bacterial symbioses in plant-sap feeding insects (Hemiptera)**

- * 11:30 Allan Cabrero - **The role of host phylogeny in shaping the diversity of bee fly (Bombyliidae) microbiomes**

12:00 Aman Gill - **Microbial roles in the biosynthesis and diversity of ground beetle (Coleoptera: Carabidae) chemical defenses**

12:30 walk to Valley Life Sciences Bldg.; have lunch on the way; main campus for rest of day

PM: 2:30-4:00: **Tours** of BNHM (use sign-up sheets provided) and **posters** in VLSB.

Session 5. Posters:

- * Alexandra Kahn - **Ancestral state reconstructions of *Xylella fastidiosa*-host plant relationships**
- * Gabriel M. Izumi de Freitas - **Enhanced mitogenome annotation and phylogenetic analysis of Cestoda**

Tuesday May 28th (cont.)

Jorge Flores - **Assessing the impact of morphology on phylogenetic analyses of combined data in bryophytes**

Jon Hill - **Global cooling & the rise of modern grasslands: Revealing cause & effect of environmental change on insect diversification dynamics**

- * Iris Menéndez - **Ecological traits mediated diversification patterns in squirrels (Sciuridae, Rodentia) in response to climatic shifts during the Cenozoic**
- * Heloísa Flores - **Phylogeny of the ribbon flies (Diptera: Schizophora: Odiniidae), with a discussion on homology of the male terminalia sclerites in the family**
- * Paul Masonick - **Integrative species delimitation in Nearctic ambush bugs (Heteroptera: Reduviidae: Phymatinae): Insights from molecules, geometric morphometrics, and ecological associations**

4:00-6:00 **Reception** in VLSB, hosted by Berkeley Natural History Museums, with drinks and light hors d'oeuvres.

evening: Meet up with old and new friends at the reception and head out to dinner in town.
Hennig Society Council Dinner.

Wednesday May 29th

AM: 9:00 **Special Keynote**, Pablo Goloboff (30 minute talk) - **Likelihood approximations of implied weights parsimony can be selected over the Mk model by the Akaike information criterion**

Session 6. **Contributed papers** 9:40-12:15. Pablo Goloboff, chair

- * 9:40 Jairo Moreno-González - **Advances on the phylogeny of the Neotropical wastebasket scorpion genus *Tityus* (Scorpiones: Buthidae): a total evidence approach**
- * 9:55 Adrián Villastrigo - **Untangling extant biodiversity in Hydroporini**
- 10:10 Mark Siddall - **Phylogenomics of the tasty clade and genomic resources for comparative studies of decapod crustaceans**
- 10:25 *Break*
- 10:35 Rudolf Meier - **Tackling open-ended taxa – large-scale species discovery and phylogenetics of South-east Asian Insects**
- * 10:50 Darren Yeo - **Building a species-rich tree-of-life for Diptera with NGS barcodes, multiplexed tagged amplicons, and mitogenomic genome skimming**
- * 11:05 Leshon Lee - **Using NGS barcodes for investigating Avian Lice diversity and co-extinction in Singapore (Insecta: Phthiraptera)**
- 11:20 *Break*
- * 11:30 Héctor Tejero-Cicuéndez - **Biogeographic and diversification patterns of squamate reptiles across North Africa and Arabia**
- 11:45 Claudia Szumik - **Unraveling Ross' classification of Anisembiidae (Embioptera)**
- 12:00 Michael Pittman - **Potential for powered flight development in microraptorine dromaeosaurids, bird-like 'raptor' dinosaurs from the Cretaceous period**

Wednesday May 29th (cont.)

12:15 - 1:30 lunch

PM: Session 7. **Symposium on "Phylogenetics, Ecology, and Conservation Biology"**

1:30 - 4:30, with 10 minute break

Organizers: Matt Kling and Prahlada Papper, grad students, Rob Skelton, post-doc, University of California Berkeley

1:30 John Wiens (keynote: 40 minute talk) - **Phylogeny, ecology, and patterns of diversity**

2:20 Seira Ashley Adams - **Chemical species recognition in an adaptive radiation of Hawaiian spiders**

2:50 Albert Chakona - **A biodiversity hotspot heats up: molecular and morphological evidence of hidden diversity within the African galaxias, *Galaxias zebratus***

3:20 Break

3:30 Rob Skelton - **The evolution and biogeography of drought resistance in oaks**

* 4:00 Matt Kling - **Save the trees: informing conservation planning with multiple facets of phylodiversity**

Session 8. **Contributed papers** 4:30-5:00. Brent Mishler, chair

4:30 Rosario Rubite - ***Begonia balangcodiae* sp. nov. from northern Luzon, the Philippines and its natural hybrid with *B. crispipila*, *B. kapangan* nothosp. nov., the first report of natural hybridization in sect. *Petermannia***

* 4:45 Ana Andruchow-Colombo - **Phylogenetic instability in a clade of the conifer family Podocarpaceae (Order Araucariales)**

5:00 - 6:00 Hennig Society Fellows meeting

eve: open for independent socializing/dinner

Thursday, May 30th.

AM: 9:00 **Special Keynote**, Kip Will (30 minute talk) - **Methodological plurality and the future of cladistics**

Session 9. **Contributed papers** 9:40-12:15. Kip Will, chair

* 9:40 Olivia Boyd - **Wrangling 3D data for next-generation morphology**

9:55 J. Salvador Arias - **A biogeographic event model under a dynamic geography**

10:10 Torsten Dikow - **Shaping our taxonomic legacy through openly sharing primary biodiversity data in taxonomic revisions**

10:25 Break

10:35 Pablo A. Goloboff - **Comparative Cladistics: identifying causes for differences in results for alternative morphological datasets**

10:50 Ward Wheeler - **Algorithmic information as phylogenetic optimality criterion**

11:05 Mark Simmons - **Divergence and support among slightly suboptimal likelihood gene trees**

11:20 Break

Thursday May 30th (cont.)

- 11:30 Denis Machado - **Facing long-branch anxiety and outgroup prejudice in the phylogenomic analysis of Flaviviridae**
- 11:45 Larry Jiménez-Ferbans - **Eclecticism in cladistics: Convergence among opposing optimality criteria may be a hoax**
- 12:00 Daniel Janies - **Evolution of gain and loss of antimicrobial resistance genes in *Escherichia coli***

12:15-1:30 lunch

pm: Session 10. **Symposium on "Character analysis in Phylogenetics"**

1:30 - 4:50, with 20 minute break

Organizer: Torben Göpel, grad student, Universität Rostock

- * 1:30 Torben Göpel - **Character analysis in phylogenetics – Conceptualization, ancestral states and evolutionary transformation**
- 2:00 Kirk Fitzhugh - **Phylogenetic inference and the misplaced premise of substitution rates**
- 2:30 Santiago Catalano - **Improvements on PASOS: analysis with reduced sampling of specimens using interpolation functions and calculation of morphological disparity along ontogenetic trajectories**
- 3:00 Break
- 3:20 Stefan Richter - **How functional morphology informs character analysis**
- * 3:50 Fabio Olivera - **Characters of chaetotaxy in Collembola: concepts, challenges and perspectives**
- 4:20 Brent Mishler - **The logic of the data matrix in phylogenetic analysis**

eve: 5:00-7:00 **Reception**, Ginkgo Courtyard (open to all)

7:00 - 10:00 **Banquet** (tickets only; all students received free ticket)

Speaker: John Wilkins - **Weaponising philosophy**

Friday, May 31st

Breakfast for those in Clark-Kerr Housing

Depart for home

