

# LONGEVITY

HDE117/ENT117 (UC Davis; Fall, 2023)  
(MW 2:10-3:30p; 100 Hunt Hall)

INSTRUCTOR	TA's	
Prof. James R. Carey	Veronica Casey	yan shan jin
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Off. Hour: Mon 11a	Off. Hour: TBD	Off. Hour: TBD

Week	Topics
Sept 24	<b>BASICS:</b> Course introduction; life course, developmental stages, Lexis diagrams
Oct 2	<b>LIFE TABLES:</b> Basic single decrement life table concepts and methods; cohort vs period models; lag and gap; mortality concepts/models
Oct. 9	<b>MORTALITY:</b> Manner and causes of death; competing risk; contingency tables; risk vs odds ratios; lead time bias; demographic heterogeneity
Oct. 16	<b>BIODEMOGRAPHY:</b> Experimental approach and concepts; use of model organisms (worm; fly; mouse);
Oct. 23	<b>LIFESPAN:</b> Concepts and evolution; basic factors that favor extended longevity; evolution of human lifespan; roles of the elderly in nature
Oct. 30 <sup>a</sup>	<b>GENETICS:</b> Genetics of longevity; adult-onset diseases (Alzheimer's); kinship concepts; aging theories
Nov. 6	<b>POPULATION AGING:</b> Epidemiological transition; world trends in aging; family demography and longevity evolution
Nov.13	<b>HEALTH:</b> compression of morbidity; disability models; activities (instrumental) of daily living (ADL's; IADL's); fetal origin hypothesis
Nov. 20	<b>SUCCESSFUL AGING:</b> Healthy habits, lifestyles and strategies (e.g., diet; exercise; social connectedness; status and wealth; education)
Nov. 27 <sup>b</sup>	<b>DEATH:</b> Dying process; bioethics and details of euthanasia and physician-assisted suicide;
Dec. 3	<b>FUTURE:</b> Longevity extension possibilities (tissue engineering; immune system enhancement, xenotransplantation); hibernation; digital immortality

<sup>a</sup> Midterm exam, Nov. 1 (Wed)A

<sup>b</sup> Term paper deadline, Sunday, Dec. 3 (midnight)

<sup>c</sup> Final exam, TBA

## COURSE DETAILS

### GRADING AND WEIGHTINGS

Exams	
Midterm	25%
Final	30%
<b>Homework</b>	20%
Term paper	25%
<hr/>	
100%	

### HOMEWORK

Weekly homework will be due at midnight Sundays involving: (i) writing short (25-35 word) essays on selected topics or term paper-related assignment; and (ii) taking timed 10-point quizzes on topics lectured on the previous week (most but not all weeks).

### BONUS POINTS

You can earn bonus points throughout the session through taking 10 point quizzes offered sporadically during or at the end of lectures. These will be scaled such that persons earning most or all students can raise their course grade by half a grade (e.g., B to B+). These scaled grades are above and beyond the baseline course curve. Typically a fifth to a quarter of students grade is bumped up half a grade. There is no penalty for not acquiring bonus points.

### TERM PAPER

1. *Purpose.* The purpose of the term paper is three-fold: i) to expand your knowledge about longevity in general and human (or animal) lifespan in particular; ii) to learn to use the library for research; and iii) to improve your writing and editing skills.
2. *Subject.* The subject for your term paper this quarter should be related to longevity and/or health. For ideas, see topics listed for Term Paper Ideas at the end of this syllabus. Use any of these topics or chose a topic of your own.
3. *Procedures.* Select a subject and write a paper in which you: i) find and review the available literature dealing with the specific subject you chose to write about; and ii) write a paper in which you describe the significance of the subject, apply appropriate techniques and concepts learned in the course and discuss the broader implications and limitations of your particular perspective or approach.
4. *Specific Requirements.* The length should be 3,000 words. The format and organization should be patterned after the Model Term Paper “*Lifespan*” posted in writing videos: i) cover page; ii) main text with numbered headings and subheadings; iii) references in style and format described on p7; and iv) at least 10 references, 7 of which must be from the *primary (journal) literature*.
5. *Grading.* Your term paper grade will be based on: i) your organization and coverage of the topic; ii) reference base as source of information and authority; iii) your apparent understanding of the material about which you write; iv) clarity and precision of your statements; v) grammar and style; and vi) technical aspects such as spelling and punctuation. Style sheet usage required (see video)

## GUIDELINES FOR TERM PAPER REFERENCE FORMATTING (HARVARD STYLE)

### JOURNAL ARTICLE

- Billari, F.C., 2022. Demography: Fast and Slow. *Population and Development Review*, 48(1), pp.9-30.
- Skorupa, D.A., Dervisefendic, A., Zwiener, J. and Pletcher, S.D., 2008. Dietary composition specifies consumption, obesity, and lifespan in *Drosophila melanogaster*. *Aging Cell*, 7(4), pp.478-490.
- Meng, X., Hu, J., Plant, R.E., Carpenter, T.E. and Carey, J.R., 2021. Distinctive egg-laying patterns in terminal versus non-terminal periods in three fruit fly species. *Experimental Gerontology*, 145, p.111201.

### BOOK (OR ENCYCLOPEDIA) SECTION

- Carey, J.R. and Zou, S., 2007. Theories of life span and aging. In: Timiras, P.S., ed., *Physiological Basis of Aging and Geriatrics*. 4th ed. Boca Raton: CRC Press, pp.55-68.
- Gerhardt, H.C., 2002. Sexual dimorphism. In: Pagel, M., ed., *Encyclopedia of Evolution*. Oxford: Oxford University Press, pp.1045-1047.

### BOOK

- Welch, H.G., 2011. *Overdiagnosed: Making People Sick in the Pursuit of Health*. Boston: Beacon Press.
- Finch, C.E., 2007. *The Biology of Human Longevity*. Amsterdam: Elsevier.
- Timiras, P.S., ed., 2007. *Physiological Basis of Aging and Geriatrics*. 4th ed. Boca Raton: CRC Press.

### EDITED BOOK

- Cooper, D.N., ed., 2003. *Encyclopedia of the Human Genome*. London: Nature Publishing Group.
- Buettner, D., 2012. The island where people forget to die. *New York Times* [online]. Available from: [[http://www.nytimes.com/2012/10/28/magazine/the-island-where-people-forget-to-die.html?\\_r=2&](http://www.nytimes.com/2012/10/28/magazine/the-island-where-people-forget-to-die.html?_r=2&)] [Accessed 23 September 2023].

### NEWSPAPER ARTICLE

- Stipp, D., 2013. Searching for meaningful markers of aging. *New York Times* [online]. Available from: [[http://www.nytimes.com/2013/07/23/health/meaningful-markers-of-aging.html?pagewanted=all&\\_r=0](http://www.nytimes.com/2013/07/23/health/meaningful-markers-of-aging.html?pagewanted=all&_r=0)] [Accessed 23 September 2023].

### WEBSITE

- CDC, 2013. Public health genomics. Centers for Disease Control and Prevention [online]. Available from: [<http://www.cdc.gov/>] [Accessed 16 November 2014].
- Mercola, J., 2013. Resveratrol in grape skins could help treat cancer [online]. Available from: [<http://articles.mercola.com/sites/articles/archive/2013/10/28/resveratrol-cancer-prevention.aspx>] [Accessed 16 November 2014].
- Buettner, D., 2010. Blue Zones [online]. Available from: [<http://www.bluezones.com/about-blue-zones/>] [Accessed 16 November 2014].

### GREY LITERATURE

Grey literature citations are a challenge because the documents are usually not part of a series (i.e. with volume, issue, edition), do not specify an author, publisher, or city, and contain informal and/or piecemeal information on their provenance. None-the-less, they are frequently a source of important information. The first rule of thumb in citing this literature is to present information systematically and ensure that it is complete so that Readers can access the source including the URL. Check with the Help Desk at Storer Library for guidance.

Alzheimer's Disease Medication Fact Sheet. 2008. *NIH Publication No. 08-3431*. Bethesda, MD. (Updated November, 2012). <http://www.nia.nih.gov/alzheimers/publication/alzheimers-disease-medications-fact-sheet>

Census 2010. Population distribution in the United States and Puerto Rico. *U.S. Census Bureau*. Retrieved 6 September 2013. <http://www.census.gov/prod/cen2010/briefs/c2010br-01.pdf>

#### LECTURE NOTES

Carey, J. R. 2020, October 5. Mortality and life tables. Longevity (HDE/ENT 117) lecture notes, UC Davis.

#### VIDEO

Kuzawa, C. and D. Eisenberg. 2014. The long reach of history: Intergenerational pathways to plasticity in human lifespan. National Academy of Sciences-sponsored workshop: "*Advances in Biodemography: Cross-Species Comparisons of Social Environments and Social Behaviors, and their Effects on Health and Longevity*". National Research Council, Keck Center, 500 Fifth St NW, Washington, DC. From UCTV Seminars URL: <http://seminars.uctv.tv/Seminar.aspx?sid=28743>

## POWERPOINT SLIDE SETS

Set	Content
1.0	Course introduction, details and requirements
<b>Analytical</b>	
1.1	Background; science; probability
1.2	Lexis diagrams; development stages
1.3	Life tables; cohort and period
1.4	Comparative life tables
1.5	Cause of death
1.6	Heterogeneity; Gompertz mortality model
1.7	Selected topics; sex mortality
<b>Biological</b>	
2.1	Biodemography; model animals
2.2	Lifespans and lifespan evolution
2.3	Human lifespan
2.4	Elderly in nature; mouse studies; cost of reproduction
2.5	Experimental biodemography
2.6	Gerontology; theories of aging
<b>Human</b>	
3.1	Genetics of aging
3.2	Genealogy and kinship
3.3	Family demography
3.4	Population aging
3.5	Morbidity; ADL's
3.6	Successful aging
3.7	End of life; euthanasia
3.8	Future worlds
3.9	Course completion
3.10	Selected demographic shorts

## SPECIAL ACCOMMODATIONS

UC Davis is committed to educational equity in the academic setting, and in serving a diverse student body. I encourage all students who are interested in learning more about the Student Disability Center (SDC) to contact them directly at [sdc@ucdavis.edu](mailto:sdc@ucdavis.edu) or 530-752-3184. If you are a student who currently receives academic accommodation(s), please submit your SDC Letter of Accommodation to me as soon as possible, ideally within the first two weeks of this course.

## FREQUENTLY ASKED QUESTIONS

### GENERAL

1. **Is there a text for this course?**

No. There are weekly assigned readings and video viewings.

2. **How is this course organized?**

Roughly a quarter of the class is devoted each to analytical (e.g. life tables) and biological (e.g. aging in model organisms) and the remaining half to the biology and demography of aging and longevity in humans.

3. **Why must we learn basic life tables?**

Because it will give you a depth of understanding of actuarial concepts that would be impossible without exposure to this and related analytical concepts. These are relatively easy mathematical manipulations as you will see.

4. **Why do you cover aging and longevity in non-human species?**

Just as rules of inheritance apply to virtually all organisms across the tree of life, many rules of aging and longevity also apply to most organisms including humans. We can learn a great deal about human aging through experimentation with non-human species that we cannot learn from humans because of experimental (ethical) constraints (among many reasons as you will learn).

5. **How can I do well (i.e. get an A) in this class?**

No secrets here. Show up to class, pay attention, do the readings, attend office hours and ask questions when you are confused. We are here to help you succeed. There are also great resources here on campus including the learning skills center that offers writing workshops. And you may want to form and/or join a study group.

6. **When is the weekly “hard” deadline for homework?**

Sunday midnight (actually 11:59p) is the deadline for homework. A good strategy is to impose your own deadlines so that you never miss the midnight deadline and thus never receive a zero for that component.

7. **How do you grade and what is your typical grade distribution?**

I grade on the curve in which a quarter to a third of students receive either an A or a B and (slightly fewer) C's. Do NOT fall into the residual D's for those who made little effort and F's for students who failed to turn in major assignments like term paper or don't take one or both major exams.

### LECTURE

8. **Will lecture notes/slides be posted prior to class?**

Yes, I will try my best to get them posted early. However, I often edit them right up to the end.

9. **Is attendance required?**

No but it is strongly encouraged. Any content presented in class including information that emerges in Q & A or ad hoc comments is fair game for exams. You will also miss out on the opportunity for accumulating bonus points (See Bonus Points)

10. **How can I minimize disruption if I need to leave lecture early?**

[Not relevant to Zoom lectures] Sit near the rear and discretely leave. It is rude to instructor and fellow students alike when a person leaves in the middle of lecture, especially picking up backpack and leaving from the middle of the lecture hall.

11. **May I talk to my neighbor in class?**

[Not relevant to Zoom lectures] Please do not since it is disconcerting to me lecturing and students near you (just like in a movie theater). If you need to communicate, write on note pad like they do in court where everyone must remain quiet.

#### EXAMS

12. **What material will we be responsible for knowing for the exams?**

You will be responsible for virtually everything that is presented in class via slides, videos and comments. I will try to let you know if the fine details unimportant for the examinations but are used to illustrate a larger concept. For readings and video viewings I will provide study guidelines and/or announce in class what main take-away information you should focus on while reading or viewing.

13. **What is the midterm and final exam format?**

Timed take-home of multiple (6-8) short (50 word) and medium-length (100-150 word) essays based on study guides posted several days prior.

#### TERM PAPER

14. **Can I change topics any time?**

Yes. Often students find that they are not interested in the original topic they chose or the literature is not extensive enough to provide the types or depth of sources needed for a good term paper.

15. **Does my topic have to be approved?**

No. However, it is always useful to solicit feedback from the instructor or one of the TAs.

16. **What is the writing video playlist that you describe in the syllabus?**

The overarching objective of this playlist that I co-produced with Dr. Sarah Perrault in the University Writing Program was to describe best practices for technical and logistical aspects of writing a term paper (Part I) and re-construct a model term paper from skeleton to final stages (Part II). You will learn a lot from these videos (links posted in Canvas) with some content showing up on quizzes.

17. **What citation style should we use?**

Use the citation and bibliographic styles that I adopted from one of the scientific journals (see Term Paper Formatting Guidelines). This course-specific requirements is equivalent to a journal's "guidelines for authors" specifying its formatting criteria for different types of sources (e.g. journal article; book; edited book; etc).

18. **Should I pay for access to journal articles online when off campus?**

**ABSOLUTELY NOT!** The UCD library pays (using some of your tuition dollars) hundreds of thousands of dollars for subscriptions to journals. When you hit the firewall for a journal off campus means that you have not gone through the UCD library. Thus use your VPN (Pulse Secure) to gain

access to the library website through which you can access the journal material. Or access when on campus.

19. **Is the 2,500 word requirement a hard number?**

No, but you need to be in the ball park (e.g. around 2,350 minimum). In principle there is no maximum per se, but anything over 3,000 words is excessive and I recommend against that length.

20. **What part(s) of the term paper do I use for this word count?**

You can use the summary and main body of the term paper. The bibliography does not count.

21. **Do you accept late papers?**

Yes. However, you need to let your TA know that you will not make the deadline. You will lose a half grade (e.g., B to B-) or a full grade (e.g., B to C) depending on the lateness.

22. **Do you provide “models” for what constitutes an “A” or “A+” term paper?**

Yes. I produced and post a “mocked up” version of a term paper on lifespan that is meant to serve as a model for your own term paper. Even better examples are the [term paper](#) submitted by HDE students in the [Lang Prize Competition](#) for undergraduate information research in the Science, Engineering and Math section (see appendices in this syllabus).

23. **There are inconsistencies in formatting between the videos on writing and the example model term papers. Which do I use?**

One reason for the differences is because each year I re-think and/or find new information on best practices and thus change my mind on what is best for some typographic aspects of the term paper. Since re-doing the videos and model paper every time I change a minor detail takes far too much time relative to the change, always use the **guidelines in the syllabus** for your term papers.

## COPYRIGHT

My lectures and course materials, including PowerPoint presentations, tests, outlines, and similar materials, are protected by U.S. copyright law and by University policy. I am the exclusive owner of the copyright in those materials I create. You may take notes and make copies of course materials for your own use. You may also share those materials with another student who is enrolled in or auditing this course. You may not reproduce, distribute or display (post/upload) lecture notes or recordings or course materials in any other way — whether or not a fee is charged — without my express prior written consent. You also may not allow others to do so. If you do so, you may be subject to student conduct proceedings under the UC Davis Code of Academic Conduct. Similarly, you own the copyright in your original papers and exam essays. If I am interested in posting your answers or papers on the course web site, I will ask for your written permission.



## READINGS

1. Austad, S. N. 2006. Why women live longer than men: Sex differences in longevity. *Gender Medicine* 3:79-92.
2. Carey, J. R. 2003. Life span: A conceptual overview. Pages 1-18 in J. R. Carey and S. Tuljapurkar, editors. *Life Span: Evolutionary, Ecological, and Demographic Perspectives*. Supplement to *Population and Development Review* 29, New York: Population Council.
3. Kramer, K. L. 2011. 'The evolution of human parental care and recruitment of juvenile help', *Trends in Ecology and Evolution*, 28: 533-40.
4. Olshansky, S. J., and B. A. Carnes. 2017. 'Primary prevention with a capital P', *Perspectives in Biology and Medicine*, 60: 478-96.
5. Poulain, M., A. Herm, and G. Pes. 2013. 'The Blue Zones: Areas of exceptional longevity around the world', *Vienna Yearbook of Population Research*, 11: 87-108.
6. Rapport R. 2010 To die of having lived. *American Scholar Spring Issue*.  
<http://theamericanscholar.org/to-die-of-having-lived/#.UikluD90l8E>
7. Taubes, G. 2007. What makes us healthy? *New York Times* (September 16).  
<http://www.nytimes.com/2007/09/16/magazine/16epidemiology-t.html?pagewanted=all&r=0>
8. Vaupel, J. W. 2010. Biodemography of human ageing. *Nature* 464:536-542.

## VIDEOS

1. Assisted suicide debate (NPR podcast)
2. Austad, S. Gerontological Society of America keynote address:  
<http://seminars.uctv.tv/Seminar.aspx?sid=23220>
3. Bill Maher Real Time--Agism (YouTube)
4. Cohen, Joel: Introduction to demography: [https://www.youtube.com/watch?v=2vr44C\\_G0-o](https://www.youtube.com/watch?v=2vr44C_G0-o)
5. George Burns—Sings “I wish I was 18 again” (YouTube)
6. Gurven, M. Evolution of human senescence: <http://seminars.uctv.tv/Seminar.aspx?sid=21938>
7. Kuzawa, C. and D. Eisenberg: The long reach of history: Intergenerational pathways to plasticity in human lifespan (U.S. National Academy of Science-hosted workshop).
8. Marmot, M. Status Syndrome: Fair society healthy lives (U.S. National Academy of Science-hosted workshop)
9. Safran, Sher and Rob 2015. Living and dying: A love story ([click here](#))
10. Still Alice movie trailer
11. Vaupel, J. W. Leipzig 2015\_Male-female health-survival paradox: Setting the stage.

## BONUS POINTS

### BONUS POINT PHILOSOPHY

My teaching philosophy is that bonus points in a course should be used to (1) provide the opportunity for students to partially offset a poor performance on an exam or homework; (2) do extra work to increase the probability of a higher course grade; and (3) incentivize students to learn more and/or become fluent in a technique or concept. The bonus points are *not needed* to achieve top grades in the class since the original fair curve will be set *before* bonus points are factored into a student's course grade (see further below).

### POINT ACCUMULATION

Students will accumulate points in a grading category separate from the gradebook (i.e., bonus points are not simply add-on points). The bonus points will be scaled based on the maximum possible (i.e., total of all categories) such that a student who receives most or all of the points can raise their gradebook point total one half grade (e.g., C+ to B-; B to B+). Only in very rare circumstances and by special review will students be able to raise their grade a full letter grade (e.g., hypothetically, a student who failed the midterm but aced the final and term paper and maxed bonus points).

Thus course grades will be determined in two steps: **Step 1**—instructor sets fair letter grade cut-offs based on weighted points from the gradebook (i.e., homework; exams; term paper). These cutoffs will be (give-or-take) roughly 20-25% A's (A+ to A-), 30-40% B's (B+ to B-) and the remainder mostly C's but a few D's and F's. **Step 2**—scale upwards the gradebook point totals for each student and then reassign a half letter grade higher if the scaled total exceeds the next cut-off. Otherwise the letter grade remains.

There are no guarantees for a grade increase, per se; only a probability—higher for students with most bonus points, lower for students with fewer bonus points, and zero for students with zero bonus points. A student with the lowest B who had obtained most of the bonus points still might not be bumped up half grade. However, a student with one of the highest B's but with a much smaller number of bonus points might have just enough to bump up him or her to the next half grade.

## DETAILS

### MASTERY AND FLUENCY

Bonus points are accumulated by demonstrating *mastery* of or *fluency* in techniques or concepts related to either course content or to term paper preparation. These are in the form of timed quizzes or assignments. To underscore the importance of and reward for both mastering and becoming highly fluent in a given skill set, bonus points are assigned according to a geometric rather than an arithmetic scale with each new correct answer worth 137% more than the previous (i.e., value increases by 1.67-fold each correct answer). This is the geometric increase needed to “grow” 1 point to 60 points in 10 iterations. Thus if one correct answer is worth 1 pt, then two correct answers are not worth 2 pts but rather 2.4 pts. And 5, 8 and 10 correct answers are not worth those 5, 10 and 20 points, but rather 10.3, 30.7 and 60.0 points, respectively. So scoring half of the questions correctly only yields one sixth of the total possible points. You must practice beforehand to maximize your point totals for each of the timed challenges.

### CATEGORIES

With the exception of those related to the term paper, bonus points will be based on timed quizzes, each with 10 questions possible. Times will be adjusted according to the difficulty of each

category. All categories total 500 points, all of which will be scaled (i.e., not added to) for adjusting weighted scores.

Questions correct	Bonus Points	Questions correct	Bonus Points
1	1	6	13
2	2	7	22
3	3	8	36
4	5	9	60
5	8	10	100

1. **Life table speed test (9 minutes)**—given values in one life table column, compute parameter in another. e.g., if  $p(0)=0.8$ ;  $p(1)=0.5$ , what is  $d(1)$ ? Answer: 0.4. This type of computation is repeated in each of 10 questions.
2. **Kinship relations speed test (5 minutes)**—identify relationship between pairs of individuals in pedigree chart. e.g. relationship of #30 to #40 (in pedigree chart posted in slides). Answer: 3rd cousins, once removed
3. **Style sheet template construction(9 minutes)**—Submit attachment; format mock term paper per specifications given via Canvas. e.g., format and submit the mock term paper with the following specs: H1, H2, body text, hanging para etc. Submit formatted paper before time expires ([see video #18 in Basics of Term Paper Writing](#)).
4. **Table construction (5 minutes)**—format tables in WORD according to specifications and content. e.g., construct and format the 4 col; 7 row table below exactly as shown complete with numbers, line spanners, headings and subheadings. Submit all tables in single WORD file as attachment before time expires (see videos #20-21 in [Basics of Term Paper Writing](#)).
5. **High-content term paper (special submission)**. This will require a separate submission for your term paper for bonus point scoring. Instead of 10 references total, this bonus category will require a total of 25 primary or secondary references in the text. Also at least 4 figures and/or tables. Papers not meeting these requirements will not be considered. Citations need to be yellow highlighted in the text and numbered in the bibliography.
6. **Use of bibliographic software**. Use Zotero ([free download](#)), EndNotes or any other bibliographic software and you will be given 10 bonus points.

#### GET HELP:

TUTORING AND WRITING:

[UCD Academic Support and Tutoring Center](#)

[Writing Support Center Welcome video](#)

EMOTIONAL SUPPORT/MENTAL HEALTH

[UCD Mental health services](#)

# APPENDICES

## LONGEVITY

HDE117/ENT117 (UC Davis)

## LONGEVITY (HDE 117/ ENT 117) SYLLABUS APPENDIX I: WRITING VIDEO PLAYLIST

Table 1. Playlist of 13 mini-lectures “How to write a research term paper”. Total time for all video clips is 43 minutes and 35 seconds (Click here for video [“The Basics of Term Paper Writing” by J. R. Carey](#)).

Video	Title	Time	Content
1	Introduction	2:27	Purpose for and overview of playlist
	<b>Part I: Preparation</b>		
2	Word processing	4:09	Best practices and tips in word processing
3	Ethical writing	1:53	Plagiarism and related concepts
4	Citations	2:30	How to cite references in text and in bibliography
5	Picking a topic	2:41	How to narrow down term paper topic
6	Types of sources	4:08	Overview of primary and other sources
7	Researching	5:37	How to search for relevant literature
8	Plan of attack	4:19	Get organized and plan
	<b>Part II: Writing</b>		
9	Stage I: Launching	1:30	Skeleton stage of paper writing
10	Stage II: Thoughts on paper	3:50	Getting ideas and concepts written
11	Stage III: Growth and development	3:44	Starting to construct paper
12	Stage IV: Complete working draft	3:04	Approaching next-to-final version
13	Stage V: Finalizing	3:29	Making perfect technically and full of content
14	Finished term paper (pdf)		Model term paper

## SYLLABUS APPENDIX 2: AWARD-WINNING TERM PAPERS

Table 1. Award winning term papers written by former students enrolled in Longevity (HDE 117/ENT 117) or ENT 199 taught by Prof. James R. Carey.

No	STUDENT	PAPER TITLE	AWARD
1	Jessica Macaluso (senior)	<a href="#">The biological basis for Alzheimer's Disease</a>	1 <sup>st</sup> Place <a href="#">Lang STEM Prize</a> (2020)
2	Barry Nguyen (sophomore)	<a href="#">Allostasis: The Fundamental Biology and Implications for Social Standing and Longevity</a>	1 <sup>st</sup> Place <a href="#">Lang STEM Prize</a> (2021)
3	Maram Saada (junior)	<a href="#">Huntington's Disease: Overview of etiology, research models and treatments</a>	1 <sup>st</sup> Place <a href="#">Lang STEM Prize</a> (2022)
4	Jeana Schaefer (senior)	<a href="#">Timeout with Torpor: History, Biology, and Future Medical Applications of a Survival Strategy</a>	1 <sup>st</sup> <a href="#">Place Lang STEM Prize</a> (2023)
5	Sarah Shores (senior)	<a href="#">Androgen sensitivity syndrome: Differences of sex development</a>	2 <sup>nd</sup> Place <a href="#">Lang STEM prize</a> (2023)
6	Dalton Manbeck-Mosig (senior)	<a href="#">Epigenetic aging clocks: Measuring mortality</a>	3 <sup>rd</sup> <a href="#">Place Lang STEM prize</a> (2023)
7	La Rissa Vasquez (senior)	<a href="#">Surviving COVID-19: Variables of Immune Response</a>	3 <sup>rd</sup> Place <a href="#">Lang STEM Prize</a> (2021)
8	Jessica Hevener (senior)	<a href="#">Impact of Maternal Obesity on Maternal and Offspring Health</a>	3 <sup>rd</sup> Place <a href="#">Lang STEM Prize</a> (tie; 2022)
9	David Vo (senior)	<a href="#">Surviving the cold: How circumpolar peoples have adapted to the extreme conditions of the Arctic</a>	3 <sup>rd</sup> Place <a href="#">Lang STEM Prize</a> (tie; 2022)
10	Barry Nguyen (sophomore)	<a href="#">Human cryopreservation: An opportunity for rejuvenation</a>	<a href="#">Aggie Transcript: Biology, Health, Medicine</a> (2021)
11	Maram Saada (junior)	<a href="#">Huntington's Disease: Overview of etiology, research models and treatments</a>	<a href="#">Prized Writing</a> (2022)

\* ENT 199: Special study

## SYLLABUS APPENDIX 3: SUPPLEMENTAL VIDEO COURSE CONTENT

Biodemography Video Guidebook available at UC Berkeley Population Sciences website. This “guidebook” consists of 172 videos produced by Longevity instructor and Biodemography book author Professor James Carey, some of which will be assigned for class viewing and others of which students may wish to view either for greater in-depth content on selected topics or for generating ideas for term paper topics.

[Link to landing page \(click here\)](#)

[Link to 4-min overview video \(click here\)](#)

POPULATION SCIENCES  
at UNIVERSITY OF CALIFORNIA, BERKELEY

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# Biodemography: An Introduction to Concepts and Methods

**Biodemography: A Complete Video Guidebook**  
Biodemography Welcome Overview video

Released by Princeton University Press in 2020, *Biodemography: An Introduction to Concepts and Methods* (by James R. Carey and Deborah A. Roach, available from Princeton University Press or Amazon) is the first book that fully integrates formal (human) demography methods with the demography-related literature in population biology, ecology, evolution, entomology and conservation biology. Because of the book's scope and depth, and especially because of its interdisciplinarity, the book's authors as well as CEDA administrators believe that its contents should be available, not only to those who have purchased the book, who have access to it through (mostly) university libraries, or who only read English. Rather they believe that the methods and concepts contained in the book should also be available to anyone interested in any aspect of biodemography regardless of their access to the book or their primary language.

- + About this Project
- + Foreword: James W. Vaupel
- + Chapter 1: Demography Basics
- + Chapter 2: Life Tables
- + Chapter 3: Mortality
- + Chapter 4: Reproduction
- + Chapter 5: Population I — Basic models
- + Chapter 6: Population II — Stage structured models
- + Chapter 7: Population III — Extensions
- + Chapter 8: Human demography
- + Chapter 9: Applied Biodemography I — Estimation
- + Chapter 10: Applied Biodemography II — Management
- + Chapter 11: Biodemographic Shorts
- + Appendices: Best Practices
- + Specialty Video Groupings

**CEDA**

- About
- Leadership
- People
- CEDA Pilot Grants
- Past Awards
- CEDA Research
- Mortality measurement
- Biodemography of Aging
- Policy and Behavioral Determinants of Adult Population Health
- Macro consequences of global aging
- Projects
- CADAS
- Cal-ADAR
- CenSoc
- CRELES
- Human Mortality Database
- National Transfer Accounts
- UCNets
- Other Aging-Related Research
- Contact

## SYLLABUS APPENDIX 4: UCD WRITING COMPETITIONS AND JOURNALS

### PRIZED WRITING

Did you write an essay you are particularly proud of for a class this quarter? Do you have a piece of written work you're sure deserves more than to be filed away in the archives of your laptop, never to see the light of day again? Are you interested in having your coursework published?

As Summer Session I comes to a close, we'd like to remind students about the academic publishing opportunities available to all undergraduates. Prized Writing is a UC Davis-affiliated academic journal that publishes exceptional student work completed for undergraduate UC Davis courses. Every year, we choose the most exemplary undergraduate writing from across the disciplines to publish in book form (sold at the UC Davis Bookstore) and feature in the [Prized Writing Archive](#).

Submissions must be for a Summer Session I 2022 UC Davis undergraduate class, 15 pages or fewer, and from **any discipline** except creative fiction writing (creative nonfiction, however, is eligible for consideration). We have even published work from subjects such as computer science, environmental policy, and health!

All papers must be submitted through the [online submission form](#) by Friday, December 16, 2022 at 11pm. To learn more about the publication, review contest rules, and see UC Davis student work from previous editions, visit the [Prized Writing website](#). You can also follow us on [Facebook](#) and [Instagram](#) to keep updated on Prized Writing events, opportunities, and features. If you have any questions about the contest, please contact the Assistant Editor, Katrin Torres-Clar, at [prizedwriting@ucdavis.edu](mailto:prizedwriting@ucdavis.edu). <https://prizedwriting.ucdavis.edu>

### NORMA J. LANG PRIZE

The Norma J. Lang Prize for Undergraduate Information Research recognizes undergraduate students whose research projects:

- Make extensive use of library resources, services or expertise
- Advance the students' understanding of the academic research process

First, second and third-place prizes will be awarded every year in each of these two areas:

- Arts, Humanities & Social Sciences
- Science, Engineering & Mathematics

The Norma J. Lang Prize for Undergraduate Information Research is funded by a bequest from the late UC Davis Professor Emerita of Botany, [Norma J. Lang](#).

- [About the Prize](#)
- [How to Apply](#)
- [FAQ](#)

#### *Awards*

- **Arts, Humanities & Social Sciences:** first prize, \$1000; second prize, \$750; third prize, \$500
- **Science, Engineering & Mathematics:** first prize, \$1000; second prize, \$750; third prize \$500

#### *Types of Entries Accepted*

- **Creative Works**, including, but not limited to, an art installation, software program, musical composition, film or video, special project, etc.



- **Empirical Research**, including, but not limited to, research conducted with qualitative or quantitative methodologies, e.g., research articles and essays.
- **Interpretive Analysis**, including, but not limited to cultural/literary criticism, film analysis, historiographies, social criticism, etc.

## AGGIE TRANSCRIPTS

### *Mission Statement*

The Aggie Transcript is a forum for students to discuss and exchange their perspectives on science and its role in society. We provide a publishing venue for students to display their expertise and to share what they have learned in their classes. Our journal represents an inclusive and accessible form of expression for students to submit pieces of original writing, news, and art related to the life sciences.

### *What we Accept*

**News.** News stories cover recent studies, discoveries, or developing events in the life sciences using the primary literature and scientific experts as sources whenever possible.

**Science and Society.** Articles in this section explain a discovery, study, or ongoing biological issue and explore the broader impacts of this development on society. Past topics have included stem cells, marijuana, and vaccines, for example.

**Research.** Undergraduate research should include the following sections: abstract, introduction, methods, results, discussion, and conclusion. View [this document](#) for guidance on how to structure each section of your research article. Before consideration for publication, the editorial board must receive an email from your faculty advisor (the lab's PI), stating permission for you to submit work completed in their lab.

**Features.** Includes interviews, profiles, case studies, long-form stories, and undergraduate research.

**Art.** Includes art, graphic design, photography, poetry, and video submissions. When submitting, attach a high-resolution image file, video file, or video link to your email. Art submissions must be scanned to ensure online and print quality. Title your work and provide an artist's note to accompany your submission (see below for details). If applicable, include dimensions, medium, location, equipment, etc., in your note. Ensure proper copyright and/or intellectual property ownership before submitting.

**Reviews.** Includes literature reviews and book reviews. Literature reviews synthesize multiple primary sources (research studies) to describe a specific field's current developments and unanswered questions for a technical audience. Like research articles, literature reviews should be thoroughly sourced. Book reviews should introduce a life sciences book written for a general audience and provide a well-informed opinion about it.

### *Website*

<https://aggietranscript.ucdavis.edu/>