Stanford | Continuing Studies

Course Title: **Understanding Alzheimer's Disease and Dementia**

Course Code: **BIO 98**

Instructor: **Victor Henderson, MD, with faculty from the Iqbal Farrukh and Asad Jamal Alzheimer's Disease Research Center (NIH Stanford Alzheimer's Disease Research Center)**

Location and Time: **Presented online, Wednesday 7:00 to 8:50 PM, first class January 12, 2022**

Course Summary:

Please see course page for full description and additional details. Course readings and handouts will be posted in Canvas. Please note that a medical or science background is not required, but some knowledge of freshman-level biology may be helpful in understanding the material.

Grade Options and Requirements:

- No Grade Requested (NGR)
  - This is the default option used by most students. Attendance and classroom/online participation is requested; no outside work will be required; no credit shall be received; no proof of attendance can be provided.
- Credit/No Credit (CR/NC)
  - A student must attend 8 of the 10 class sessions and prepare a short review (about 1200-2000 words) on any related topic that interests the student. We recommend that you submit a topic proposal at the time of the third class (this can be a sentence or two; January 26). The final short paper is due on the last day of class (March 16).
- Letter Grade (A, B, C, D, No Pass)
  - Same requirements as for Credit/No Credit (see above).

**Please Note: If you require proof that you completed a Continuing Studies course for any reason (for example, employer reimbursement), you must choose either the Letter Grade or Credit/No Credit option. Courses taken for NGR will not appear on official transcripts or grade reports.*

Weekly Outline:

• Week 1 Jan. 12	◦Normal aging	Dr. V. Henderson
	◦Dementia and Alzheimer's disease, part 1	
• Week 2 Jan. 19	◦Dementia and Alzheimer's disease, part 2	Dr. V. Henderson
	◦Parkinson's disease dementia (PDD) and dementia with Lewy bodies (DLB)	Dr. K. Poston
• Week 3 Jan. 26	◦Mild cognitive impairment (MCI))	Dr. V. Henderson
	◦Frontotemporal dementia (FTD)	Dr. K. Younes
• Week 4 Feb. 2	◦Vascular dementia	Dr. V. Henderson
	◦Chronic traumatic encephalopathy (CTE)	Dr. D. Born
• Week 5 Feb. 9	◦ Caregiving in dementia	Ms. J. Clark
	◦Positron emission tomography (PET) scan imaging in dementia	Dr. E. Mormino
• Week 6 Feb. 16	◦Neuropathology of dementia *[includes a demonstration of diseased brain specimens]*	Dr. H. Vogel
	◦Neurological assessment in dementia	Dr. V. Henderson
• Week 7 Feb. 23	◦Unusual presentations of Alzheimer's disease	Dr. I. Skylar-Scott
	◦Equity, diversity, and inclusion in dementia diagnosis, treatment, and research	Dr. P. Rodriguez-Espinosa

Please contact the Stanford Continuing Studies office with any questions
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• Week 8 Mar. 2	◦The genetics of Alzheimer's disease	Dr. M. Greicius
	◦Strategies for the prevention of Alzheimer's disease dementia	Dr. V. Henderson
• Week 9 Mar. 9	◦Alzheimer's disease treatment: FDA approved therapies	Dr. V. Henderson
	◦Clinical drug trials for MCI and dementia	Dr. S. Sha
	-Hot topic session 1: New drug development, from bench to bedside	Dr. F. Longo
• Week 10 Mar. 16	◦Hot topics sessions 2-4, continued	
	-The gut microbiome and dementia	Dr. A. Bhatt
	-The role of vision in Alzheimer's disease and dementia	Dr. S. Pershing
	-Transcranial magnetic stimulation for mild cognitive impairment and dementia	Dr. J. Taylor

BIO 98 — Understanding Alzheimer's Disease and Dementia

Gen Xers, millennials, and of course Boomers cite Alzheimer's disease as an overriding concern for the years ahead. It is described as a tsunami and already affects close to 6 million Americans. Many things change as we transition into middle age and older adulthood, including memory and other mental skills. Large declines in memory and cognition are referred to as dementia, and the leading cause of dementia is Alzheimer's disease. Although Alzheimer's is largely an illness of old age, early biochemical changes precede clinical symptoms by well over a decade. Featuring faculty from the NIH-NIA Stanford Alzheimer's Disease Research Center, this course provides an in-depth overview of cognitive changes over the normal lifespan and reviews evolving concepts of dementia. We will look at what Alzheimer's disease is and is not, what parts of the brain are affected, and why the disorder sometimes runs in families. We will consider differences among cognitive aging, mild cognitive impairment, and Alzheimer's disease; and we will compare and contrast Alzheimer's disease with other disorders that cause dementia. We will also address modern approaches to diagnosis and treatment, new therapies, potential preventive strategies, and challenges faced by Alzheimer's caregivers. The course will conclude with a discussion of hot topics and controversies in the field.