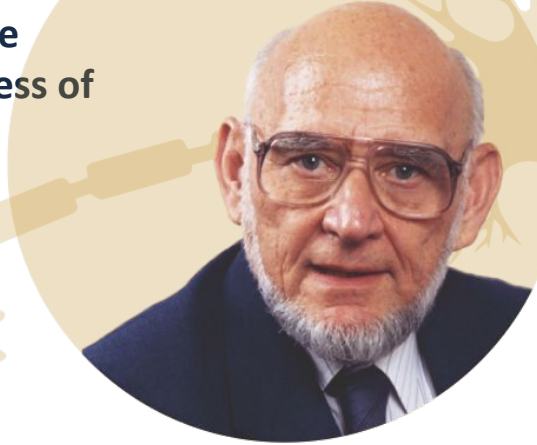
Celebrating 40 Years

of Transformational Accomplishments
at the Shiley-Marcos Alzheimer's Disease Research Center

1976

Dr. Robert Katzman, founding director of the Shiley-Marcos Alzheimer's Disease Research Center at UC San Diego, identifies Alzheimer's disease as a "major killer" in an editorial in the Archives of Neurology leading to enhanced public awareness of the disease, increased activism, and a major expansion of research funding.



1984

Dr. George Glenner isolates and sequences the Aβ protein that is the primary constituent of the amyloid plaque, a hallmark of Alzheimer's disease pathology. This provides valuable inroads into understanding the pathogenesis of Alzheimer's disease and the development of diagnostic tests for the disease.

1984

The UC San Diego Alzheimer's Disease Research Center (ADRC) is established with funding from the National Institute on Aging as one of the first five ADRCs in the nation.

1984

Foundational Gift from Florence Riford establishes the Florence Riford endowed chair in Alzheimer's Disease Research. Dr. Robert Katzman is the first to hold the chair, followed by Dr. Leon Thal (1993) and Dr. William Mobley (2005).

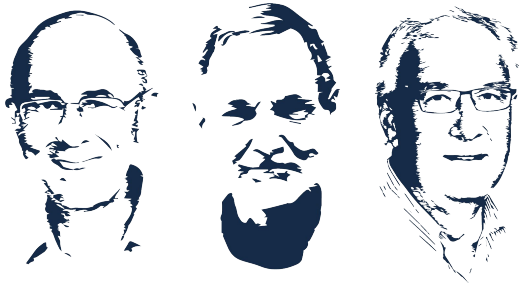
1987

Dr. Robert Katzman conducts the first major study of the prevalence of dementia and Alzheimer's disease in China, the Shanghai Dementia Survey, discovering a prevalence similar to Western countries. Funded by the Riford endowment, this study is the first to show that low educational attainment is a risk factor for the disease.

1988

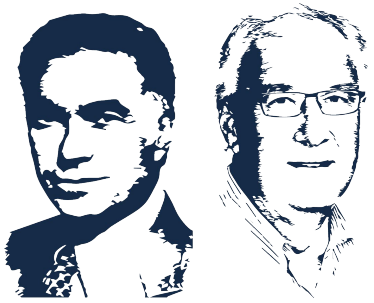
Dr. Nelson Butters identifies rapid forgetting on standardized tests of episodic memory as one of the most valuable clinical indices of Alzheimer's disease in its early stages.

1990



Drs. Lawrence Hansen, David Salmon, Douglas Galasko and colleagues describe a Lewy body variant of Alzheimer's disease that comes to be known as Dementia with Lewy Bodies (DLB), the second most common cause of dementia after Alzheimer's disease. Their findings are instrumental in establishing clinical criteria for the diagnosis of DLB.

1991



Drs. Robert Terry, David Salmon and colleagues show that cortical synaptic loss is a feature of Alzheimer's pathology that correlates most closely with cognitive decline. This paves the way for the development of synaptic biomarkers and therapeutics aimed at preserving synapses to resist Alzheimer's disease.

1992

Dr. Leon Thal leads the development of the multi-center Alzheimer's Disease Cooperative Study (ADCS) from the Tacrine trial consortium and is its first director, followed by Drs. Paul Aisen (2008) and Howard Feldman (2016). The ADCS becomes an international leader in the conduct of clinical therapeutic trials for Alzheimer's disease leading the first clinical trials in Mild Cognitive Impairment and Alzheimer's disease prevention.

1992

Drs. Leon Thal, Ken Davis and colleagues conduct a multi-center clinical trial in patients with mild Alzheimer's disease that shows a beneficial effect of Tacrine, an acetylcholine enhancing drug that becomes the first FDA approved medication for Alzheimer's disease.

1993

Dr. Tsunao Saitoh identifies a novel “non-Aβ component of AD amyloid” in the brain tissue of patients afflicted with Alzheimer's disease. This is later shown to be α-synuclein, the protein that aggregates in Parkinson’s disease and Dementia with Lewy Bodies.

1995

Dr. Douglas Galasko collaborates with investigators at Athena Neurosciences to show that levels of Aβ1-42 in cerebrospinal fluid (CSF) are decreased in Alzheimer’s disease. This sets the stage for the development of diagnostic biomarkers for Alzheimer’s disease in CSF and later in blood.

1997

Dr. Tsunao Saitoh identifies a variant in the protein tau that is associated with Progressive Supranuclear Palsy (PSP), a rare neurodegenerative disorder that produces parkinsonism. This paves the way for further genetic discoveries linking the regulation of tau splicing to several neurodegenerative diseases.

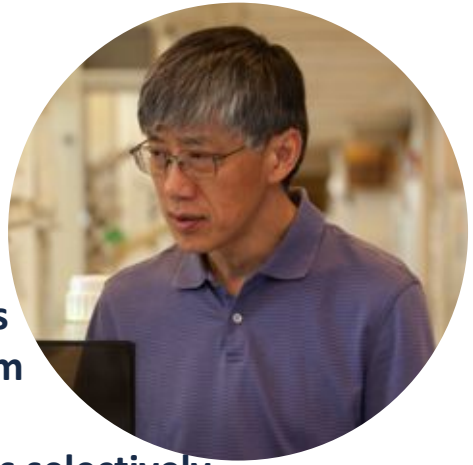
1999

An estate gift from Helen Jarrett is used to establish the Helen A. Jarrett endowed chair in Alzheimer's Disease Research. Dr. David Salmon is named as the first to hold the chair.

2001

Dr. Mark Tuszynski leads the first human clinical trial of gene therapy to treat Alzheimer's disease. This pioneering work developed technology to introduce genetic changes directly into targeted areas of the brain to enhance nerve growth factor production and rescue dying brain cells in patients with Alzheimer's disease.

2001



Drs. Edward Koo, Todd Golde and collaborators discover the mechanism by which non-steroidal anti-inflammatory drugs selectively modulate γ-secretase activity to reduce production of the Aβ protein. This leads to clinical trials of non-steroidal anti-inflammatory drugs in patients with Alzheimer's disease.

2002

ADRC Administrator Mary Sundsmo and Dr. Leon Thal work with California Assemblyman Howard Wayne to pass legislation in the State of California (AB2328) to allow surrogate consent for research participation by individuals with Alzheimer's disease who lack capacity due to cognitive dysfunction. This serves as a model for surrogate consent procedures across the country.

2004

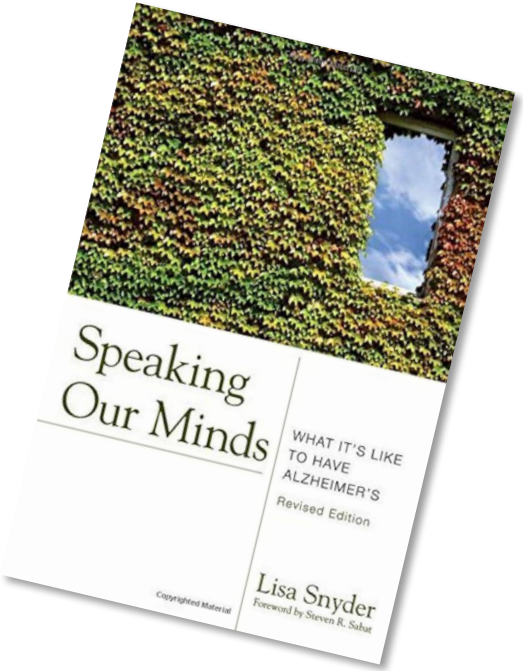
A Transformational Gift from Donald and Darlene Shiley expands the scientific scope of the ADRC and is a catalyst for research into new therapies and mechanisms of disease. The center is named the Shiley-Marcos Alzheimer's Disease Research Center in honor of the couple and Darlene's mother Dee Marcos.

2005

An additional gift from Darlene Shiley establishes the Shiley endowed chair in Alzheimer's Disease Research in honor of Dr. Leon Thal. Dr. Roberto Malinow is named as the first to hold the chair, followed by Dr. Judy Pa (2022).

2009

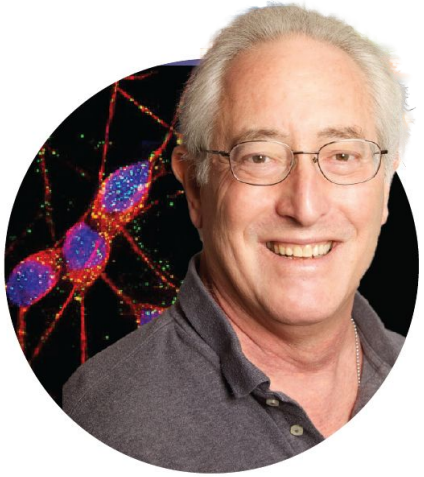
SMADRC Social Worker Lisa Snyder publishes "Speaking Our Minds: What It's Like to have Alzheimer's Disease" based upon interviews conducted with participants in her pioneering support groups designed specifically for patients with dementia due to Alzheimer's disease.



2010

Dr. Steve Wagner discovers a potent γ-secretase modulator that reduces production of the Aβ protein leading to a new potential therapy for Alzheimer's disease.

2012

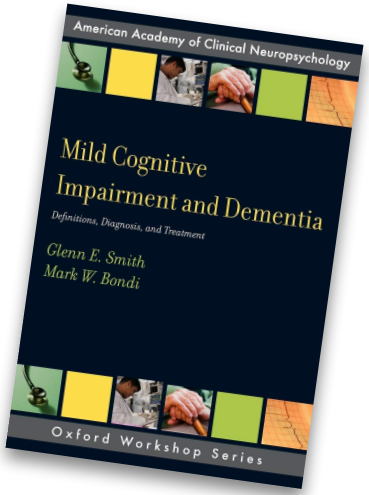


Dr. Larry Goldstein is the first to use stem cells from patients with Alzheimer's disease to develop in vitro models of hereditary and sporadic forms of Alzheimer's disease. This groundbreaking work provides a platform to discover cellular mechanisms involved in AD and to test potential drug therapies.

2012

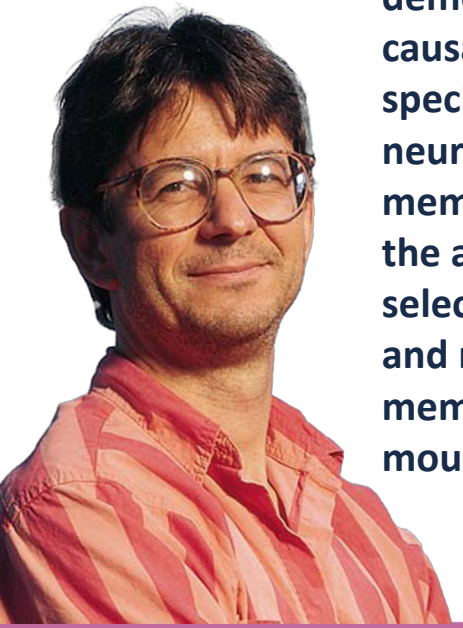
Dr. Tamar Gollan develops the Multilingual Naming Test (MINT) to sensitively measure decline in language ability in patients with Alzheimer's disease who speak English, Spanish, Mandarin, or Hebrew. The success of the MINT leads to its adoption by all 35 ADRCs throughout the U.S. in 2015.

2013



Dr. Mark Bondi with Dr. Glenn Smith publishes the book "Mild Cognitive Impairment and Dementia: Definitions, Diagnosis, and Treatment" in which he describes the development and application of actuarial neuropsychological criteria for Mild Cognitive Impairment that improves clinical diagnostic precision.

2014



Dr. Roberto Malinow demonstrates a causal link between specific forms of neural activity and memory, providing the ability to selectively remove and restore a memory in the mouse brain.

2017

Drs. Rahul Desikan, Anders Dale, James Brewer and colleagues develop a polygenic hazard score that combines the effects of multiple genetic variants to predict an individual's risk of developing Alzheimer's disease.

2018

Drs. Douglas Galasko and Byron Caughey at the National Institute of Allergy and Infectious Diseases develop a new highly sensitive assay called real-time quaking-induced conversion (RT-QuIC) that can detect abnormal proteins associated with Dementia with Lewy bodies and Parkinson's disease in cerebrospinal fluid.

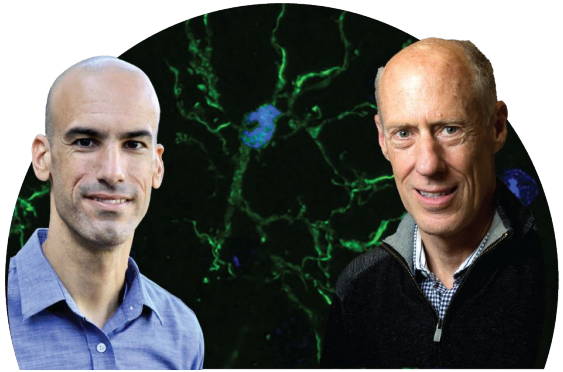
2019

Dr. Subhojit Roy demonstrates that a CRISPR system can be used to edit an Alzheimer's-linked gene called APP in cultured nerve cells and begins a program to translate this into human clinical trials.

2019

Drs. Douglas Galasko, David Salmon and colleagues show that CSF levels of the synaptic protein neuronal pentraxin (NPTX2) are reduced in patients with Alzheimer's disease and predict rate of cognitive decline. These findings provide the foundation for future development of new biomarkers of synaptic dysfunction and loss that occurs in Alzheimer's disease.

2019

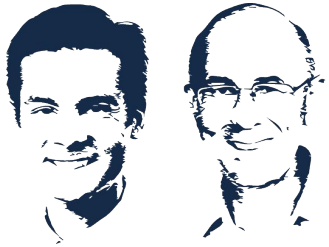


Drs. Alexi Nott and Chris Glass show that genetic variation in non-coding portions of DNA in sporadic Alzheimer's disease is largely confined to microglia enhancers related to BIN1, a key regulator of proinflammatory microglia activation.

2021

Drs. Jerome Mertens and Fred Gage develop methods to directly convert skin cells from patients with Alzheimer's disease into neurons producing the first human models of sporadic and inherited Alzheimer's disease where the impact of aging is preserved in the cells.

2022



Drs. David Coughlin, Douglas Galasko and colleagues validate α-Synuclein Seed Amplification in cerebrospinal fluid as a marker of α-Synuclein in the brain in the context of Alzheimer's disease co-pathology.

Shiley-Marcos Alzheimer's Disease Research Center Celebrating 40 Years!

Acknowledgments

- Faculty & Staff
- Clinicians & Social Workers
- Research Scientists & Trainees
- Community Partners & Advocates
- Academic & Industry Partners
- Private & Public Granting Agencies
- UCSD Administration & Institutional Support
- Donors & Philanthropists
- Quality of Life & Outreach Volunteers
- Promotores

Acknowledgments

Many thanks to the dedicated participants and their care partners

without whom none of this

would be possible.