

SHILEY-MARCOS ALZHEIMER'S DISEASE RESEARCH CENTER

CURRENTS

UPDATES IN RESEARCH AND RESOURCES



Yves and Henri Jacot: Brothers Dedicated to Alzheimer's and Bilingualism Research

By Bailey Hofmann

Yves Jacot and his late older brother, Henri Jacot, have contributed a combined total of 38 years of research data to the Shiley-Marcos ADRC. Born in Mexico City, Yves immigrated to San Diego with his family in 1940 when he was just 7 years old. After graduating from San Diego High School, he followed his brother to study economics at UC Berkley. Henri had been drafted during his studies in architecture, and he served in World War II. Yves was also drafted during his economics studies and served two years in Panama during the Korean War. After his return, Yves and Henri decided to use their GI Bill to study French in Paris. They lived in France for just under a year and did a lot of

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The Next 5 Years Shiley-Marcos Alzheimer's Disease Research Center funded by NIA for another 5-yr cycle

By Emily Little, MPH and James Brewer, MD, PhD

In the past decade, the Shiley-Marcos ADRC Core Faculty's expertise has guided us in pursuit of **models**, **markers**, and **mechanisms** of Alzheimer's Disease and Related Dementia (ADRD) research. Building on our historic strengths, the Center will carry forward in the next five-year grant cycle in these areas with an updated focus. Our historic strength in the **model** of disease was in rodents; however, these models are limited due to fundamental differences in the disease expression in humans. Moving forward, we will be advance human models of disease by collecting skin cells and transforming them into uniquely human models of the 'disease in a dish' for deeper exploration of the molecular and cellular aspects of AD.

UCSD has a known legacy of being the first to recognize amyloid protein as a defining pathological **marker** of AD. Now we have proposed to standardize the measurement of known markers, such as amyloid and tau and to look for new and powerful molecular markers of this illness at its earliest stages. Hence, we will continue to sample cerebrospinal fluid for the valuable insights it provides us, and we will continue efforts to identify a marker from plasma derived from samples of blood.

The strength in basic science at UCSD has allowed us to advance understanding of the pathological **mechanisms** of AD. Moving forward, we plan to build on that legacy by considering mixed pathologies in aging, along with the causes of related dementias. We will leverage our

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Next 5 Years

geography and partnerships with other centers to study how ADRD might express itself differently in Latinos and other underrepresented minorities.

This spring we are celebrating a new five-year cycle of grant funding. We would like to share some of the accomplishments highlighted in our grant application from the last five years. Our business is to produce knowledge that will lead to an end to ADRD. Thanks to volunteer participation in research, the SMADRC has been highly productive yielding over 440 center-supported publications that contributed to major advances in the following areas of research:

Pen and paper cognitive tests

- Developed new ways to identify preclinical disease, MCI, and early AD
- Identified how visuospatial perception may aid in the diagnosis of related dementias (Parkinson’s (PD) and Lewy body disease (DLB))
- Developed the multilingual naming test (MINT), a culture and language adaptive naming test

Advanced imaging

- Developed advanced imaging techniques that show a more robust relationship with cognition and cerebral spinal fluid biomarkers in MCI
- Identified ways to examine a disease-relevant area of the brain (called the locus ceruleus) to help stage preclinical and early AD

Blood donation

- Pathology, fluid, and genetic samples have allowed the mapping

of a wider genetic landscape of dementia risk and the development of a Polygenic Hazard Score for AD, generating a more accurate predictor of the age of disease onset and prediction of associated biomarkers and pathology

normalities, and for drug screening related to amyloid and tau proteins

Cerebral spinal fluid donation

- Permitted efforts to standardize markers across 32 National Centers including studies of protein in cerebral spinal fluid – and led to identification of a new marker related to synaptic regulation
- Advanced diagnostic testing of α -Synuclein as a biomarker for PD and DLB with > 90% diagnostic sensitivity and specificity

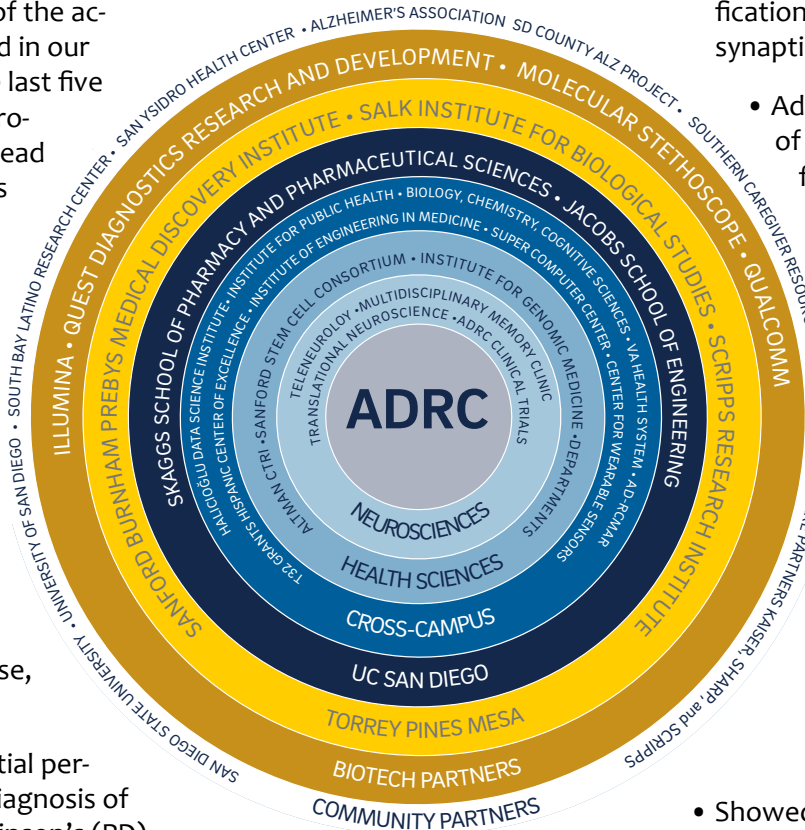
- Identified small RNA particles in cerebrospinal fluid that might be helpful in diagnosing AD and PD

Brain donation

- Allowed discovery of how amyloid, tau and α -synuclein pathology in hippocampal subfields contribute to cognitive impairment in DLB

- Showed that hippocampal sclerosis of aging has slower decline of memory than AD
- Demonstrated clinical diagnostic accuracy of dementia and subtypes in Latinos
- Provided the means for “-omic” studies of microglial gene expression and single cell expression

Participant engagement has helped the development of the field’s understanding of the complexity of ADRD. We share our banked biological samples with hundreds of affiliated researchers at dozens of centers each year. We also train the next generation of physicians and scientists and award small grants to collect pilot data to support larger grant applica-



- Advanced studies of neuronal protein biomarkers in exosomes in peripheral blood as a marker of AD that may change during preclinical stages
 - Contributed to Whole Exome Sequencing and Whole Genome Sequencing in AD, DLB, FTD and Posterior Cortical Atrophy
- ### Skin donation
- Created new techniques for developing ‘disease in a dish’ models
 - Supported studies of aging, AD and DLB on mRNA expression and mitochondrial and nuclear pore ab-

tions. In addition to the invaluable time and biological specimens that research participants donate to our Center, generous financial contributions have enabled us to remain competitive.

In the last fiscal year, the SMADRC benefitted from generous donations from our engaged and passionate philanthropists. These funds supported the work of the center and the competitive recruitment of six new physicians and scientists to be core members of the ADRC (Drs. Hevner, Hiniker, Leger, Banks, Gonzalez, Chen), as well as the retention of our most senior faculty. A portion of these funds were spent in support of junior trainees to support research activities leading to their first grant application or professional development activities, such as presentations at National and International conferences. The remainder of these funds enabled community outreach, engagement, and educational offerings in Quality of Life programs beyond the scope of current grant funding.

The SMADRC benefits from connectivity to a rich and diverse local environment. An interactive environment that engages a diverse community will enable our Center to continue leading the field. We will continue to be a hub for scientific and community exchange and support, optimizing core efforts and synergies to best serve the local and broader patient, caregiver, and research communities. To each and every one of you who support the SMADRC, please accept our many thanks – every contribution matters and we sincerely thank you.

2019 Annual Open House Appreciation Event

Each year, the Shiley-Marcos Alzheimer's Disease Research Center hosts an Open House event to demonstrate our sincere gratitude to our research participants. Our intent is to show our participants how much we value their contributions to our program and to emphasize the dependency of the work that we do on their generous volunteerism. The invitees are participants from our research cohort who dedicate their time to advancing science in the arena of memory, aging, and Alzheimer's disease and related dementias, as well as the valued caregivers who run our weekly caregiver support group. In addition, we invite volunteers from community organizations that work closely with our center to help us bridge the gap between the university and the community with regard to education, outreach, and service provision. This gives them the opportunity to continue learning more about the value of the center's work and the benefits they bring to the program through their ongoing engagement.

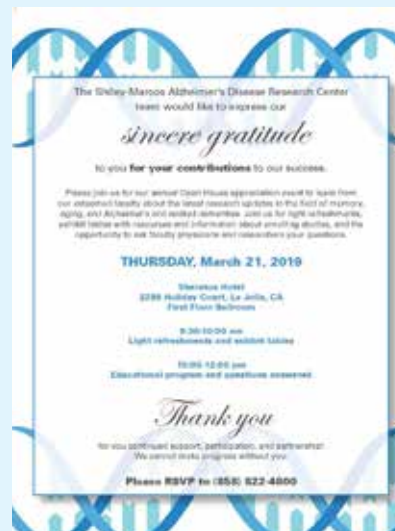
Our two hour educational program, provided by faculty experts, is designed to provide research updates and show our volunteers what has become possible and how our science is advancing as a function of their engagement in our research community. Each year we invite new speakers, so attendees can learn about the science guiding

current studies seeking new participant volunteers. Attendees have the opportunity to better understand the reasons they are being asked to agree to specific research procedures and the value of their data. They have the opportunity to ask the researchers questions firsthand. This year, the speakers included an esteemed panel of faculty experts including, Dr. Brewer, who presented on updates to the core infrastructure and projects under our NIA funded umbrella as well as Dr. Galasko,

who presented on current biomarker research. Dr. Goldstein's presentation focused on the new induced pluripotent stem cell (iPSC) core of our SMADRC in collaboration with the Salk and Sanford Burnham Institutes and the exciting new developments in that area of science. Dr. Hevner, presented about the neuropathology of

Alzheimer's and related dementias to highlight the value of brain and other related organ donations (eyes and spinal cords) to our center. Finally, Dr. Feldman presented the clinical trials landscape in Alzheimer's, providing an overview of recent trials outcomes and the current enrolling options and future directions.

Our volunteers deserve ongoing recognition for their contributions. We hope they feel our appreciation for their commitment and dedication to our center and this important area of study. We hope you will join us next spring for the 2020 open house!



Yves and Henri Jacot

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traveling and sight-seeing together. After returning from France, Yves went back to UC Berkley to finish his degree in economics but after working in this field for only a year, he decided to return to France for an additional two years. During this time, he took classes to improve his French, and he earned a living by serving as a guide for private family tours around Paris. He excelled at this due to his fluency in both English and Spanish and ongoing mastery of the French language he achieved through specialized certification. While he enjoyed his work immensely, he felt that the opportunities for growth as a tour guide were limited, so he returned to the United States and began working as a foreign language instructor. Yves taught French, Spanish, and English as a second language (ESL) classes for 37 years in three different school districts and he continues to work with an online ESL program. Bilingualism has and continues to be a very important facet of Yves Jacot's life's work and he has supported numerous ADRC studies led by Dr. Gollan focused on the relationship between bilingualism, the aging brain, and Alzheimer's disease.

Henri Jacot began participating in the Longitudinal study in 1994, and he convinced Yves to also join when he moved back to San Diego in 2004. They both got involved with the Longitudinal study due to their interest in receiving feedback on how their memory and cognitive abilities progressed as they aged. Henri and Yves served as each other's study partners from 2004 to 2014, while Henri began to show some change in his memory. Henri passed away on December 8th, 2018, and, as per his wishes, his brain was donated for autopsy to our program. Autopsy of the brain tissue continues to be an integral part of Alzheimer's disease research. Understanding the neurological pathology associated with the disease and how it relates to the clinical presentation of symptoms continues to shape researchers' understanding of disease mechanisms. Yves has also agreed to donate his brain for autopsy at the end



of his life, even though some Latino participants opt out of this portion of the study. He explained that religious outlooks and traditions taught within the Latino community and culture may account for some of the resistance to brain donation. However, he believes that by donating his brain to our research, he is able to continue contributing to the scientific body of knowledge of Alzheimer's disease, even after he passes. Yves is also aware that there is some resistance to general participation in research within the Latino community. He believes it is very important for his community to have adequate representation and this



is why he has referred people to the study throughout his participation. He is very committed to Alzheimer's research, "If I am not present, how can I expect others to be present?"

Yves was able to experience the impact of Alzheimer's disease firsthand through his brother's

decline. He states that his involvement with our center helped him have a better understanding and knowledge of what to expect with the disease when his brother was experiencing it. When asked about advice for new and potential research participants, he "encourages anyone and everyone to participate." He wants to assure people that knowledge of a possible decline leads to a better understanding of one's self and that we should not be afraid of the future.

The Shiley-Marcos Alzheimer's Disease Research Center is growing its Spanish Language Programs! We offer many opportunities for Latinos and Spanish speakers to participate in important studies designed to better understand how ethnicity and language and socio-cultural influences can impact memory, aging, and Alzheimer's disease and related dementias. If Latinos do not participate, we will not know whether the results of studies apply to them. Be part of the solution and help future generations by participating!

Supporting Meaningful Engagement in Stimulating Activities: An Update on the SMADRC Quality of Life Program Collaborations

By Tracey Truscott, LCSW and Ivonne Arias, MSW

A Quality of Life (QOL) Program is an intervention that offers the opportunity for a person experiencing memory and thinking changes to engage in a socially and mentally stimulating activity outside of their routine. It is an opportunity for these individuals to meet and interact with others and spend quality time with their accompanying partner in order to enhance quality of life and coping abilities in a supportive environment that has been adapted to accommodate limitations and enhance successes. Many of our QOL programs are inspired by the expressed needs of persons with memory loss or care partners. Community partners are pivotal in providing these opportunities to the community. They contribute immensely by offering their expertise, activity-specific venues and resources, and passion for partnering with the SMADRC to make a difference in the lives of persons living with memory and thinking changes and their loved ones. With the combined efforts of these wonderful community partners, QOL programs provide people with mild-to-moderate dementia and their care partner or friend an opportunity for meaningful social engagement. The following programs are being offered at regular intervals at no cost to persons, with memory or thinking changes, in the San Diego community. Some of the programs are also offered in Spanish.

My Life Through the Lens Photography Workshop

Dates offered: 2 separate sessions: every Friday in April in English and every Friday in June in Spanish

Language: English and Spanish



This four-session photo taking, album making workshop, developed and facilitated by the Museum of Photographic Arts (MOPA), is offered to participants with Mild Cognitive Impairment (MCI), early stage Alzheimer's Disease, or a related disorder and an accompanying family member or friend. All cameras, printing supplies, and finished albums are graciously provided by MOPA. The program is designed to accommodate varying experience and ability levels and support the needs of persons with memory loss. This program is offered in partnership with the Alzheimer's Association. The April session in English is offered at the Alzheimer's Association and the June session in Spanish is offered in Chula Vista.

The Musical Biographies Multisensorial Workshop

Date offered: 2 separate sessions: once a week in May-June and once a week in September-October

Language: English



This 6-session workshop, developed and facilitated by Villa Musica, will provide participants with the opportunity to create an individualized music playlist and an accompanying handmade book incorporating personalized memorabilia to recount the memories it inspires. The program is facilitated by a multidisciplinary team, including a doctoral level musical arts

educator, a music therapist, a local artist specializing in bookmaking, a licensed clinical social worker, and support staff to offer a multisensorial experience comprised of music, guided reminiscence, sensory stimulation, and social interaction. The Musical Biographies Project is offered at Villa Musica in Sorrento Valley.

Memories at the Museums- Balboa park

Date offered: The second Friday of every month from 2:00-3:00pm year round

Language: English



Based on a novel program at the Museum of Modern Art in New York whereby docents facilitate special discussions and tours for people with dementia and their families, we launched our own San Diego based program in 2007. Museum docents at four partnering museums undergo dementia-specific training from ADRC staff members to best engage people with mild to moderate memory and thinking changes and their friends or family members in discussion about the artwork to stimulate visual and verbal abilities and spark memory. The tours at the museums alternate between the four co-sponsoring museums which are all located in central Balboa park: the San Diego Museum of Art, the Timken, Mingei, and Photographic Arts Museums.

If you, or someone you know, is interested in participating in any of these no cost QOL programs, please contact Tracey Truscott, LCSW for more information and to register. Pre-registration is required to ensure that group size and composition are carefully considered to best support programmatic benefits.

For more information contact Tracey Truscott at (858) 822-4800, or by email at ttruscott@ucsd.edu.

Observational Studies

COGNITIVE AGING LONGITUDINAL STUDY (ALSO AVAILABLE IN SPANISH)

PI: Douglas Galasko, MD

CONTACT: Tracey Truscott, LCSW
(858) 822-4800 or ttruscott@ucsd.edu

TIME INVOLVED: annual visit until the end of life

DESCRIPTION: The purpose of this study is to learn how the brain changes as we age. This is an observational study that collects behavioral, medical, and cognitive data and assesses neurological functioning. It does not involve an intervention. This is done annually from the time of enrollment to death. Information about strate-

gies for healthy brain aging is provided, as is feedback about one's annual performance on cognitive testing. We continue to obtain blood and cerebrospinal fluid (CSF) samples to compare changes detected in blood and CSF to changes in cognition and brain structure.

REQUIREMENTS: Age 65 and older if normal cognition or diagnosis of MCI or early dementia due to Alzheimer's, FTD, or DLB; study partner; lumbar puncture (LP) and Magnetic Resonance Imaging (MRI) required; brain autopsy required.

ALZHEIMER'S DISEASE NEUROIMAGING INITIATIVE 3 (ADNI)

PI: James Brewer, MD, PhD

CONTACT: Mollie Paster
(858) 822-4800 or mrpaster@ucsd.edu

TIME INVOLVED: minimum 5 years

DESCRIPTION: The primary goal is to discover, optimize, standardize, and validate clinical trial measures and biomarkers used in ongoing Alzheimer's disease research. The Alzheimer's Disease Neuroimaging Initiative (ADNI) plays a central role in improving treatment trials. Since the study's launch, ADNI Investigators with regulators in both the US and abroad have facilitated the design of major completed and ongoing drug trials. ADNI 3 is a

continuation of this work. ADNI 3 is a non-randomized, natural history, non-treatment study. Clinical/cognitive, imaging (MRI and PET scans), biomarker, and genetic characteristics will be assessed across the three cohorts: Normal controls (NC), Mild Cognitive Impairment (MCI), and mild Alzheimer's disease (AD). Visits will occur annually for MCI and AD subjects and every two years for NC subjects.

REQUIREMENTS: Age 55-90; normal cognition or a diagnosis of MCI or AD; a study partner; overall good general health. Subjects are required to undergo MRI and PET scans and a lumbar puncture.

EVOKED RESPONSE POTENTIALS

PI: James Brewer, MD, PhD

CONTACT: Mollie Paster
(858) 822-4800 or mrpaster@ucsd.edu

TIME INVOLVED: : minimum 2 years

DESCRIPTION: This study is to examine the utility of non-invasive measures of the brain's electrical activity as an early marker of Alzheimer's disease. Electroencephalogram recordings (EEG) and Event-Related Potentials (ERP) have shown promise in small studies, but no study has examined how they compare to other markers more commonly used in clinical trials of Alzheimer's disease. We will collect EEG and ERP data along with brain imaging using magnetic resonance imaging (MRI) to assess brain atrophy and use positron emission tomography

(PET) to assess for the presence of proteins associated with Alzheimer's disease. We will determine whether EEG and ERP measures are powerful enough to serve as surrogates for these more expensive markers of disease. Clinical/cognitive, imaging (MRI and PET scans), biomarker, and genetic characteristics will be assessed across the three cohorts: Normal controls (NC), Mild Cognitive Impairment (MCI), and mild Alzheimer's disease (AD). Visits will occur once every three years for all subjects with telephone contacts in between visits.

REQUIREMENTS: Age 60-90; fluent English speakers (as of age 12), with normal cognition or a diagnosis of MCI or AD; have corrected visual acuity of at least 20/50 for distant vision; have overall good general health. Subjects are required to undergo an MRI, PET scan, and EEG.

Intervention Trials for MCI and Early Alzheimer's Disease

DISCOVER

PI: Douglas Galasko, MD

CONTACT: Dan Szpak, RN
(858) 822-4800 or dszpak@ucsd.edu

TIME INVOLVED: Up to two months and will require at least five study clinic visits including a three-day stay at the UCSD clinical research unit. Compensation will be provided to enrolled participants.

DESCRIPTION: Posiphen is an experimental drug with a novel action against amyloid and potentially other brain proteins that build up pathologically in the brain in

Alzheimer's. It may delay Alzheimer's disease (AD) onset or slow the progression of possible AD-related brain damage due to amyloid buildup. Participants in Discover will help researchers learn if the experimental drug is both safe and tolerated. This is a randomized, double-blind, placebo-controlled study with a 75/25 chance of receiving the experimental drug.

REQUIREMENTS: Age 55-85; diagnosis of MCI or mild Alzheimer's disease; MMSE 17-30; study partner, MRI scan, lumbar puncture, willing to undergo extended stay in clinical research unit (2 nights).

UC CURES SAL-AD

PI: Stephanie Lessig, MD

CONTACT: Barbara Johnson
(858) 246-1303 or b4johnson@ucsd.edu

TIME INVOLVED: 52 weeks

DESCRIPTION: Double blind, randomized, placebo controlled, pilot PK/PD, evaluating tau acetylation inhibitor salsalate for mild-to-moderate Alzheimer's disease. Sal-

salate is a non-steroidal anti-inflammatory (NSAID), which is used to treat arthritis. Salsalate is being tested here for its property to inhibit tau acetylation, which may play a role in tau aggregation.

REQUIREMENTS: Age 50-85 with diagnosis of AD; MMSE 14-30. Subject agrees to LP, MRI, Positron Emission Tomography (PET) (amyloid and tau), and cognitive testing and must have a study partner.

T2 PROTECT AD (BIOHAVEN)

PI: Gabriel Leger, MD

CONTACT: Nana Kori
(858) 246-3279 or nkori@ucsd.edu

TIME INVOLVED: 58 weeks total (up to 42 days of screening period, 48 weeks treatment, and 4-week posttreatment observation period, 10 total visits)

DESCRIPTION: A phase 2, randomized, double-blind, placebo-controlled trial to evaluate the efficacy and safety of BHV-4157 in patients with mild to moderate

Alzheimer's disease. BHV-4157 is an optimized prodrug of the glutamatergic agent, riluzole, which is currently used to treat ALS. Preclinical model suggests that BHV-4157 has neuroprotective effects from AD-related pathology and cognitive dysfunction. The medication is an oral tablet taken once daily.

REQUIREMENTS: Age 50-85; diagnosis of Alzheimer's disease; MMSE 14-24; study partner to accompany all clinic visits; cognitive testing; blood and urine sample collection; MRI; optional lumbar puncture.

THE SMADRC HAS A WIDE ARRAY OF ENROLLING STUDIES AVAILABLE TO PERSONS WITH AND WITHOUT MEMORY CONCERNS.

If you are interested in participating, contact Tracey Truscott, LCSW at (858) 822-4800 or ttruscott@ucsd.edu (English) or Ivonne Arias, MSW at (858) 822-4800 or iarias@ucsd.edu (Spanish). They can add you to our research registry and help you find the best research "match" for you.

Dr. Peavy's study about the role of stress in the health of caregivers is enrolling participants. Latino and non-

Latino caregivers and non-caregivers are eligible. Contact Cynthia Avalos at cavalos@ucsd.edu for more information.

Dr. Salmon's study (ARMADA) about the use of iPad administered tests to assess cognition in Spanish speakers, persons with MCI, and seniors 85+ are still enrolling. Contact Brandon Pulido at b1pulido@ucsd.edu for more information.

Staff Updates

Faculty



Robert Hevner, MD, is a neuropathologist-neuroscientist with particular interests in brain development, neurogenesis, and transcription factors. He is certified in Anatomic Pathology and Neuropathology by the American Board of Pathology since 1997. He conducted postdoctoral research in developmental neuroscience with John Rubenstein at UCSF from 1996-2000. He moved to University of Washington (Seattle) as Assistant Professor of Pathology in 2000, where he specialized in pediatric neuropathology at Seattle Children's Hospital and Research Institute, and remained until 2018, rising to Professor. In 2018, Dr. Hevner moved to the University of California, San Diego (UCSD), where he is Professor and Director of Neuropathology in the Department of Pathology. His lab is located at the Sanford Consortium for Regenerative Medicine. He has served as Vice President of the American Association of Neuropathologists. His research has been continuously funded by NIH since 1997, and he presently serves as an appointed member of of the Molecular Neurogenetics (MNG) Study Section.

ers of Parkinson's Disease and other neurodegenerative diseases. She is funded by NINDS and the American Federation for Aging Research as a Paul B. Beeson Scholar as well as a Congressionally Directed Medical Research Program Parkinson's Disease Early Investigator Award.



Annie Hiniker, MD, PhD is an Assistant Professor of Neuropathology who completed her MD and PhD at the University of Michigan and her

residency and fellowship in Anatomic Pathology and Neuropathology at the University of California, San Francisco. She serves as a neuropathologist for the UCSD ADRC and the San Diego VA Hospital, and runs a research lab focused on the molecular driv-

Trainees



Denis Smirnov is currently a graduate student in the Neuroscience Graduate Program at UCSD, working with Dr. James Brewer, Dr. David Salmon, and

other SMADRC faculty. He is investigating the ways neuroimaging techniques and cerebrospinal fluid (CSF) biomarkers can be used to differentiate causes of cognitive impairment and track outcomes of clinical trials. As part of the Medical Scientist Training Program at UCSD, he has already completed the first two years of medical school, and after the completion of his PhD he will return to complete his MD as well. With this combined clinical and research training, Denis hopes to help bridge the gap between the lab and the doctor's office and bring the latest scientific breakthroughs to the treatment of disease.



Erika Robinson is currently a MSW student at San Diego State University. She is originally from Okinawa, Japan and has been living in San Diego since 2014. She

has gained a variety of social service experiences through jobs, internships, and volunteer opportunities in different countries such as Japan, America, Cambodia, and Thailand. These experiences helped her determine why she pursued the MSW program, as she

wanted to learn more advanced clinical skills to enhance the services that people need in society. Growing up on the world famous longevity island of Okinawa, it was always her interest to support seniors and caretakers. She is excited for the internship opportunity at UCSD to gain more knowledge in the field of aging and to learn more about diseases, such as Alzheimer's and related dementias.

New Staff Members



Barbara Dwyer, CCMA, graduated from Southern Utah University with a BS degree in Human Biology. Prior to coming to San Diego, she worked

in Los Angeles at UCLA Neurological Services as a program coordinator for the Mary S Easton Center for Alzheimer's Disease Research and the UCLA Memory Disorders Clinic. In this role, she worked with patients enrolled both in clinical trials and diagnostic cognitive assessments with Neurobehavioral and dementia specialists. Her passion and interest in this field began during her studies in human biology and continued to grow due to her interests in brain imaging and differential diagnosis analysis techniques with faculty researchers at UCLA. She strives to make a difference every day by touching the lives of others and is inspired by the strength and courage of patients and families dealing with neurodegenerative diseases. She has recently joined the SMADRC as a Clinical Research Coordinator for the longitudinal study.

Volunteers



Lorraine Martinez is a UCSD student pursuing a Bachelor's degree in Cognitive and Behavioral Neuroscience. As a student, she learned about the ADRC and the impact they make in the research for Alzheimer's. She wanted to become involved, so she started volunteering and now contributes to their work. As a volunteer, she assists with various administrative duties, shipments, and preparing for visits. Being here, she has received many opportunities such as observing neuropsychologist visits and scoring neuropsychological exams. She has met a diverse group of staff and learned about the unique role each person plays. She does not doubt that the exposure and experiences she has had will pave the way for her dream to become a neuropsychologist.



Rebekah Barakos-Cartwright, EdD, recently retired from education and currently a caregiver of a parent diagnosed with Alzheimer's, Rebekah is intrigued by the insidious impact of Alzheimer's on the patient, caregivers and society. Consequently, she first started volunteering for Alzheimer's San Diego two years ago. She then decided to volunteer for the ADRC to learn more about Alzheimer's from the clinical perspective. One unique characteristic of volunteering at ADRC is that there are varied ways to be involved and to use one's individual skills. One of Rebekah's roles is helping with the compilation, editing and organization of the Currents Newsletter.

Farewells

Beata Santiago: I am retiring! It's hard to believe that it's been over 30 years. I'm excited and at the same time a little emotional writing this letter. UCSD ADRC has been my second family.

I was hired by Phyllis Lessin on October 3, 1988 to manage the ADRC medical records and from there on everyone has taken me under their wings. I feel blessed, grateful and proud to work with so many amazing people with so much knowledge, enthusiasm, and professionalism.

I got married, raised a family with two awesome boys while my husband served in the military for 21 years, and through the challenges of life I wouldn't have made it this far without the love and support from everyone. Just want say thank you all for your love, support and mostly your friendships. I will miss you all. May God continue to bless you all.

Alex Figueroa: Alex will be leaving the ADRC this spring to attend medical school. His experience as a psychometrist at the ADRC has been unforgettable and has taught him many lessons that he will take with him as he trains to be an adept and culturally competent physician. His efforts to recruit Latino participants into research studies have involved starting up a community memory screening project at the Mexican consulate, doing outreach with local physicians, and interviewing a neurologist in the first Spanish episode of UCTV's Brain Channel. All these experiences have propelled him to start medical school with great determination and drive.

He is very grateful to all his incredible coworkers at the ADRC who welcomed him from the start with open arms and who have been great teachers, great teammates, and great friends. He wishes them all success in all their future endeavors and wishes the ADRC a great year.

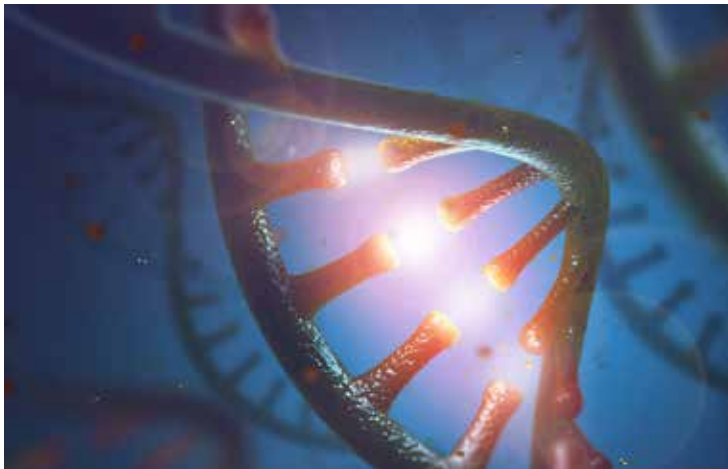


Kimberly, Alex, Amanda, Beata

Kimberly Lopez: Kimberly's past three years at the ADRC have allowed her to develop into an efficient and skillful lab manager. She has assisted with hundreds of lumbar puncture procedures, has been involved with blood and CSF processing, and recently began coordinating the Advancing Prevention study with Dr. Galasko. All these experiences have boosted her expertise enough to take her to the next step in her journey to become a physician. She will be attending a post-baccalaureate program in the fall before applying to medical school.

Amanda Rodriguez: As a bilingual psychometrist at the ADRC for the past 3 years, Amanda has done hundreds of cognitive assessments for the longitudinal study, and has worked as a clinical coordinator for the caregiver study. She has presented and published a research paper with one of our PI's, and will be moving on to the next phase in her career this summer. Amanda has been accepted to the Keck Graduate Institute to pursue a career as a physician assistant. Her experience working with Alzheimer's research has inspired her to continue this type of work as a healthcare professional.

Additional Research Opportunities



Advancing Prevention of Alzheimer's Disease - Extracellular RNA as a biomarker

RNA is made by all cells in the body and acts together with DNA to control how cells make proteins. Some RNA can get outside of cells (called extracellular RNA) and can be detected in the blood or urine. Dr. Galasko is conducting a study to find out more about measuring extracellular RNA in blood and urine and whether this can help in diagnosing of Alzheimer's disease. More specifically, we are trying to find out if extracellular RNA is altered in people with Alzheimer's disease and whether measuring it can help with diagnosis. This could provide a new and inexpensive way to diagnose the disease. This study will compare people with Alzheimer's disease, Parkinson's disease and control subjects and will also exam whether extracellular RNA (exRNA) levels vary during different times of the day.

Participants will undergo blood draws and urine samples at two different visits one week apart. You may be eligible for the study if you are a senior 60-85 with normal cognition or a diagnosis of PD or AD and have overall good general health. Participants are compensated \$100 for each completed visit. If you are interested in participating, contact Kimberly Lopez, kml084@ucsd.edu or (858) 822-4800

Looking Into the Brain for Tau

Up until recently, we could not see the damage done by Alzheimer's in the brain until someone died and we were able to perform an autopsy. Now, we are able to use an innovative brain imaging technique, tau PET, to see one of the toxic proteins thought to cause problems such as memory loss in Alzheimer's. Tau is useful and important in its healthy form, but in its unhealthy form it builds up and disrupts communication from one part of the brain to another. In Alzheimer's, this form of tau builds up in the regions of the brain important for memory early on, but then spreads to those regions which are responsible for lan-

guage, understanding the visual input our brain receives, and important processes like multi-tasking and judging what is appropriate in social situations. As the tau spreads to interrupt these functions, the person with Alzheimer's disease becomes more impaired. Thanks to a generous philanthropic gift, we will begin using tau PET to visualize this protein, and understand how it interacts with other disruptive processes in people who are in the early stages of the disease. By studying this, we will learn more about the fundamental mechanisms underlying brain damage and cognitive impairment in AD. We expect to apply this knowledge and insight to develop and evaluate promising treatments for the disease. Eligibility and enrollment information will be available soon; stay tuned!



Novel Cognitive Tests for Predicting Alzheimer's Disease

David Salmon PhD, his graduate student Denis Smirnov, and their colleagues at the SMADRC are conducting a study to test the sensitivity of how new neuropsychological tests can be used to identify early and pre-clinical Alzheimer's disease.

You may be eligible for the study if you are 1) 65 years or older, 2) literate in English, 3) not colorblind, 4) and have normal cognition, MCI, or Alzheimer's disease.

Participants will complete tests of memory and visuospatial ability, lasting approximately 1 hour in total. This is a short one-visit study that may be added to the end of a participant's visit for another study. There is no compensation for this study, other than the heartfelt thanks of a graduate student. If you are interested in participating, contact Denis at dsmirnov@ucsd.edu.

Biomarkers for Memantine Sensitivity: A National Institute of Aging (NIA) Study to Determine Who Will Be Sensitive to Alzheimer’s Disease Medications

Despite the fact that Alzheimer’s Disease (AD) affects almost 6 million Americans, medication options remain very limited. Even among the few available choices, medications are not “one size fits all”: people differ in sensitivity to different medications. When physicians recommend a medication for AD, there is no way to predict who will, or will not, be sensitive to that medication. If there were some biological signal – or “biomarker” – to reduce the guess-work in choosing AD medications, it would be possible to “personalize” this decision, and accelerate the process of getting the best possible medication response. One FDA-approved medication, memantine (“Namenda”), significantly slows the progression of AD symptoms in some but not all individuals. Memantine is well-tolerated by the vast majority of patients, but there is no way to determine who will, or will not, be sensitive to its memory-protective effects. So, some patients spend precious months taking memantine, but ultimately see no benefits. In a major “breakthrough”, UCSD investigators reported that some individuals carry “biomarker” signals that their brain is particularly sensitive to memantine. Importantly, they now need to test whether these biomarkers of memantine sensitivity – measured by EEG - can predict whether memantine will slow the progression of AD. To study this, all eligible candidates receive treatment with memantine, at standard doses, for 24 weeks: there is no “placebo” group. Before starting treatment, participants complete tests to determine whether they have the predicted EEG biomarkers for memantine sensitivity. Investigators will then compare the clinical gains from memantine – how well it slowed the progression of AD symptoms – among individuals who did vs. did not exhibit the sensitivity “biomarker”. For additional information, contact Joyce Sprock at (619) 471-9455 or jsprock@ucsd.edu.



Healthy Aging and Your Gut

Normal aging can lead to loss of gut microbial biodiversity which is linked to inflammaging and immunosenescence or the loss of immunocompetence. Probiotics (live microorganisms that improve gut flora) can potentially reduce inflammation and promote a healthier gut in older adults. This study will examine dietary supplementation with an herbal medicine, Triphala, which serves as a prebiotic food for good bacteria and a probiotic that contains healthy bacteria. The aim is to learn more about inflammation, aging and the gut microbiome. These microbes help our bodies perform a variety of functions from digesting our food to helping our immune system function properly. Participation involves nutritional supplementation or placebo, two research visits at UCSD, and possible compensation of up to \$50. Eligible participants will be older adults (60+) in good health who have not traveled outside the US in the past 3 months and who are willing to be randomly assigned to receive a nutritional supplement or placebo for 8 weeks.

To learn more, please contact Christine Peterson, PhD at chpeterson@ucsd.edu.

Free NIA Resource about Biomarkers for Dementia Detection and Research

Biomarkers are a critical component of Alzheimer’s and related dementias (ADRD) research. Most studies now require participants to agree to assessments that provide biomarker data for objective information that can assist with early detection and diagnosis as well as tracking disease progression in the living brain. SMADRC researchers worked with the NIA Alzheimer’s Disease Education and Referral (ADEAR) team to develop the newest ADRD fact sheet, titled “Biomarkers for Dementia Detection and Research”. This fact sheet was created to provide readers with an easy to read tool so they could learn about biomarkers—measures of what’s happening in the body—used in dementia detection and research, including brain imaging tests such as MRI and PET. **Visit order.nia.nih.gov to find this and other free fact sheets and booklets about ADRD.**

CURRENTS

UPDATES IN RESEARCH AND RESOURCES

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2019 SERIES

Memories at the Museums



SAN DIEGO MUSEUM OF ART

January 11, June 14,
September 13

MINGEI INTERNATIONAL MUSEUM

Closed for
Renovation

TIMKEN MUSEUM OF ART

March 8, July 12,
November 8

MUSEUM OF PHOTOGRAPHIC ARTS

February 8, April 12,
May 10, August 9,
October 11, December 13

Join us on the second Friday of each month from 2:00 - 3:00 at one of these exceptional San Diego museums for a unique docent-led discussion and tour. Museum docents engage people with mild-to-moderate Alzheimer's or a related disorder and an accompanying family member or friend in discussions about the artwork to stimulate visual and verbal abilities and to spark memory. Memories at the Museums alternates between the four co-sponsoring museums that are all located in central Balboa Park. Museum admission and tours are *free of charge* to participants.

Each monthly tour is limited to 8 pairs (16 participants total). Pre-registration is requested. Please call Tracey Truscott, LCSW at the Shiley-Marcos Alzheimer's Disease Research Center at (858) 822-4800 to register for a no cost tour.