POSTERS SESSION

- **THEME 1**
  Clinical trials: methodology
  P2 to LP03

- **THEME 2**
  Clinical trials: results
  P16 to LP04

- **THEME 3**
  Clinical trials: imaging
  P27 to LP07

- **THEME 4**
  Clinical trials: biomarkers including plasma
  P40 to LP12

- **THEME 5**
  Clinical trials: cognitive and functional endpoints
  P54 to P57

- **THEME 6**
  Cognitive assessment and clinical trials
  P58 to LP13

- **THEME 8**
  Health economics and clinical trials
  P69 to P72

- **THEME 9**
  Epidemiology and clinical trials
  P74 to LP14

- **THEME 11**
  New therapies and clinical trials
  P75 to P86

- **THEME 12**
  Proof of concept/translational research in AD
  P88 to LP17

- **THEME 13**
  Digital health/E-trials
  P96 to LP18

- **THEME 14**
  Telemedicine and AD clinical trials
  P101
THEME 1
Clinical trials: methodology

P2 Comparing the Down Syndrome Community Experience with Sporadic AD Participant Insights: Overcoming Barriers to Clinical Trial Recruitment
J. Hendrix 1, P. Ferrell 2, M. Chevrette 1, H. Barce 2, T. Batdorf 2, H. Hillerstrom 1
1Tufts Medical Center - Burlington (United States), 2Eli Lilly & Company - Indianapolis (United States)

P3 Key baseline characteristics of participants enrolled using tau PET screening in two phase 2 trials
S. Scherbinin 1, S. Andersen 1, W. You 1, C. Evans 1, L. Munsie 1, A. Lo 1, J. Sims 1
Eli Lilly And Company - Indianapolis (United States)

P4 First in Human study with ALZ-101, a unique and highly specific therapeutic vaccine against the neurotoxic oligomeric form of Aβ 1-42.
A. Sandberg 1, I. Nylander 1, M. Sheinin 2, 3, J. Rinne 2, 4, 5, Z. Lovro 2, K. Torfgård 1, A. Bylock 1
1Alzinova Ab - Gothenburg (Sweden), 2Cst - Turku (Finland), 3University of Turku, Institute of Biomedicine - Turku (Finland), 4Turku PET centre, University of Turku - Turku (Finland), 5Division of Clinical Neurosciences, Turku University Hospital - Turku (Finland)

P5 Salvaging COVID-19 Interrupted Alzheimer Clinical Trials Using Virtual Patient Simulations
P. Van Der Graaf 1, H. Geerts 2
1Certara - Canterbury (United Kingdom), 2Certara - Berwyn (United States)

P6 Predicting CDR-SB progression using data from 6 interventional clinical trials and ADNI
B. Toh 1, V. Steffen 1, Y. Chen 1, C. Rabe 1, M. Friesenlähn 1, T. Bittner 2
1Genentech - South San Francisco (United States), 2Roche - Basel (Switzerland)

P7 Can Pharmacodynamic Interaction With Genotypes and Comedications Explain Variability In Clinical Trials? A Quantitative Systems Analysis
H. Geerts 1, A. Sprios 2
1Certara - Berwyn (United States), 2In Silico Biosciences - Portland (United States)

P8 Finding treatment effects in Alzheimer’s trials in the face of heterogeneity in disease progression
R. Jutten 1, S. Sikkes 1, W. Van Der Flier 1, P. Scheltens 1, P.J. Visser 1, B. Tijms 1
1Amsterdam Umc, Location Vumc - Amsterdam (Netherlands)

P9 Analytical validation of APTUS-Aβ assay: an accurate, reproducible and precise LC-MS/MS assay for quantifying plasma amyloid beta 40 and 42
K. Kirmess 1, M. Holubasch 1, S. Knapik 1, M. Meyer 1, J. Contois 1, Y. Hu 1, P. Verghese 1, E. Smith 1, S. Harpstrite 1, T. West 1, I. Fogelman 1,
J. Braunstein 1, K. Yarasheski 1
1C2n Diagnostics - St Louis (United States)

P10 Reducing sample size requirements for randomized control trials using high-frequency markers
D. Taylor-Rodriguez 1, D. Lovitz 1, N. Mattek 2, C.Y. Wu 2, J. Kaye 2, H. Dodge 2, B. Jedynak 1
1Portland State University - Portland (United States), 2Ohsu - Portland (United States)

P11 Disparities in Alzheimer’s Disease Clinical Trial Enrollment in the United States and Canada: An Indigenous Perspective
N. Olson 1, B. Alpens 1
1St Boniface Hospital Research - Winnipeg (Canada)

P12 The Impact of Protocol Design on Data Quality Findings in Dementia Clinical Trials
D. Miller 1, X. Wang 1, A. Kott 2
1Signant Health - Blue Bell (United States), 2Signant Health - Prague (Czech Republic)

P13 Recruitment and Retention in Two Decades of NIH-Funded Alzheimer’s Disease Clinical Trials
M. Ritchie 1, 2, D. Gillen 3, 2, J. Grill 1, 4, 2
1Department Of Neurobiology And Behavior, 2University Of California, Irvine - Irvine (United States), 3Department Of Psychology And Neuroscience, 4University Of North Carolina At Chapel Hill - Chapel Hill (United States)

P14 Using Digital Twins to Decrease Enrollment and Increase Statistical Power in Alzheimer’s Disease Clinical Trials
D. Hall 1, A. Schuler 1, Y. Poulou 1, D. Bertolini 1, A. Smith 1, C. Fisher 1, J. Walsh 1
1Unlearn.ai – San Francisco (United States)

P15 Validation of a novel technology for non-invasive prognosis of amnestic MCI in clinics and clinical trials
K. Vejdani 1, E. Khosravi 1, T. Liebmann 1, P. Krishnamurthy 1, P. Kamali-Zare 1
1Darmiyan San Francisco (United States)

LP01 Factors affecting willingness to participate in an FMT study for Alzheimer’s disease
J. Thorstenson 1, M. Heston 1, 2, N. Vogt 1, S. Harding 1, M. Beifuss 1, R. Aune 1, J. Langfus 3, N. Davenport-Sis 1, N. Chin 1, F. Rey 2, B. Bendlin 1, 4
1Wisconsin Alzheimer’s Disease Research Center, University Of Wisconsin School Of Medicine And Public Health - Madison (United States), 2University Of Wisconsin-Madison (United States), 3Department Of Psychology And Neuroscience, University Of North Carolina At Chapel Hill - Chapel Hill (United States), 4Wisconsin Alzheimer’s Institute, University Of Wisconsin School Of Medicine And Public Health - Madison (United States)
**POSTER PRESENTATIONS**

**LP02**
**Use of predictive algorithms for the selection of patients in clinical trials: an enrichment strategies comparison**
A. Movschin 1, C. Longo Dos Santos 1, A. Mascia 1, J. Samper-Gonzalez 1, U. Thoprakarn 1, P. Tran 1, 2, J.B. Martini 1, E. Cavedo 1
1Qynapse Sas - Paris (France), 2Equipe-projet ARAMIS, ICM, CNRS UMR 7225, Inserm U1117, Sorbonne Université UMR S 1127, Centre Inria de Paris, Groupe Hospitalier Pití-Salutari Charles Foix, Faculté de Médecine Sorbonne Université - Paris (France)

**LP03**
**Applying Feedback from an Advisory Board of Research Participants to Improve Clinical Trials in Alzheimer’s Disease and Related Dementias**
S. Walter 1
1Alzheimer's Therapeutic Research Institute, University Of Southern California - San Diego, CA (United States)

**THEME 2**
Clinical trials: results

**P16**
**New Horizons in Alzheimer Research from Amyloid and Beyond**
J. Apter 1, R. Iqbal 2, O. Aung 2
1Global Clinical Trials - Princeton (United States), 2Princeton Medical Institute - Princeton (United States)

**P17**
**Administering tricaprilin after a meal optimises bioavailability and minimises adverse events**
J. Walker 1, L. Nelleman 1, L. Chow 1, B. Morimoto 2
1Cerecin - Singapore (Singapore), 2Cerecin - Denver (United States)

**P18**
**Novel formulation AC-SD-03 of tricaprilin leads to excellent PK and safety in doses of up to 30g BID**
L. Chow 1, L. Nelleman 1, B. Morimoto 2, J. Walker 1
1Cerecin - Singapore (Singapore), 2Cerecin - Denver (United States)

**P19**
**An evidence-based risk-mitigation approach to study design in APOE[−] mild to moderate AD**
J. Walker 1, L. Nelleman 1, B. Morimoto 2, L. Chow 1
1Cerecin - Singapore (Singapore), 2Cerecin - Denver (United States)

**P20**
**Tricaprilin Shows Similar PK, Safety and Tolerability in Caucasians and Asians**
B. Morimoto 1, L. Nelleman 2, L. Chow 2, J. Walker 2
1Cerecin - Denver (United States), 2Cerecin - Singapore (Singapore)

**P21**
**Frequency of Antipsychotic-Associated Adverse Events with Pimavanserin Treatment in Patients with Dementia-related Psychosis**
G. Demos 1, E. P. Foff 1, D. Weintraub 2, B. Mcevoy 1, S. Stankovic 1
1TACADIA Pharmaceuticals, Inc. - Princeton (United States), 2University Of Pennsylvania School Of Medicine - Philadelphia (United States)

**P22**
**The Alzheimer’s disease THErapy with NEuroaid (ATHENE) Study: Assessing the Safety and Efficacy of Neuroaid II (MLC901) in patients with mild to moderate Alzheimer’s disease stable on Cholinesterase inhibitors or Memantine: A 6-month Randomized, double-blind, placebo-controlled trial with a 6-month open label extension: RESULTS**
C. L. Chen 1, B. Y. Tan 2, L. Qingshu 3, N. Venketasubramanian 4
1National University Of Singapore - Singapore (Singapore), 2St Luke’s Hospital - Singapore (Singapore), 3Singapore Clinical Research Institute - Singapore (Singapore), 4Raffles Neuroscience Centre - Singapore (Singapore)

**P23**
**A multiple ascending dose study to evaluate the safety, tolerability, pharmacokinetics, and pharmacodynamics of the anti-phospho-tau antibody JNJ-63733657**
W. Galpern 1, K. Haeverans 2, L. Janssens 2, G. Triana-Baltzer 3, H. Kolb 3, L. Li 1, P. Nandy 4, M. Mercken 2, K. Van Kolen 2, H. Sun 1, L. Van Nueten 2
1Janssen Research & Development - Titusville (United States), 2Janssen Research & Development - Beerse (Belgium), 3Janssen Research & Development - La Jolla (United States), 4Janssen Research & Development - Rantian (United States)

**P24**
**The Critical Path for Alzheimer’s Disease (CPAD) – Pre-competitive data sharing and generation of innovative high-impact quantitative tools to support Alzheimer’s disease drug development**
S. Sivakumaran 1, K. Romero 1, N. Hanan 1, Y. Karten 1, V. Sinha 2, S. Budd Haeberlein 3, N. Rabbee 4
1Critical Path Institute - Tucson (United States), 2Medicines Co. - Cambridge (United States), 3Pfizer - Woodcliff Lake (United States)

**P25**
**Sensory Gamma Stimulation Therapy Reduces Sleep Disruptions in Alzheimer’s Subjects as Assessed by Continuous Actigraphy Recordings**
A. Cimenser 1, E. Hempel 1, T. Travers 1, M. Williams 1, M. Hajos 1, Z. Malchano 1
1Cognito Therapeutics, Inc - Cambridge (United States)

**LP04**
**Applying machine learning algorithms to predict amyloid risk in Japanese Trial-Ready Cohort webstudy**
K. Sato 1, R. Iwata 2, K. Suzuki 3, Y. Niimi 4, A. Iwata 2, T. Iwasubo 5
1Department Of Neurology, University Of Tokyo - Bunkyo City (Japan), 2Department Of Neurology, Tokyo Metropolitan Geriatric Medical Center Hospital - Itabashi City (Japan), 3Division Of Neurology, National Defence Medical College - Tokorozawa (Japan), 4Unit For Early And Exploratory Clinical Development, University Of Tokyo - Bunkyo City (Japan), 5Department Of Neuropathology, University Of Tokyo - Bunkyo City (Japan)
THEME 3
Clinical trials: imaging

P27 Molecular Imaging of Tau Pathology in Myotonic Dystrophy Type 1 and Alzheimer's disease: Implications for Underlying Mechanisms
E. Poulin 1, C. Dalaière-Théroux 2, 3, A.M. Cayer 2, 1, D. Bédard-Tremblay 2, 1, T. Rouleau-Bonenfant 2, 1, F. St-Onge 4, J.M. Beauregard 5, N. Sergeant 6, J. Puymirat 5, R. Jr. Laforte 2, 3, 1
1Clinique Interdisciplinaire De Mémoire, Département Des Sciences Neurologiques, CHU de Québec - Québec (Canada), 2Université Laval, Faculté De Médecine - Québec (Canada), 3Clinique Interdisciplinaire de Mémoire, Département des Sciences Neurologiques, CHU de Québec - Québec (Canada), 4Douglas Health Institute - Montréal (Canada), 5Centre De Recherche du CHU de Québec - Québec (Canada), 6Université De Lille, CHRU, Inserm, UMR 1172, Equipe Alzheimer & Tauopathies - Lille (France)

P28 A Multi-input, Multi-modal Deep Learning Model to Predict Time to Conversion to Alzheimer’s Disease
D. Hibar 1, B. Toth 1, C. Rabe 1, D. Clayton 1
Genentech, Inc - South San Francisco (United States)

P29 Perceptions of Amyloid Imaging Among Cognitively Normal Older Adults with Elevated and Not Elevated Amyloid
M. Ryan 1, 2, D. Gillen 1, 2, 3, 4
1Institute For Memory Impairments And Neurological Disorders, University Of California, Irvine - Irvine (United States), 2Department Of Statistics, University Of California, Irvine - Irvine (United States), 3Department of Psychiatry and Human Behavior, University of California, Irvine - Irvine (United States), 4Department of Neurobiology and Behavior, University of California, Irvine - Irvine (United States)

P30 Neuroimaging results of the AMBAR Study, a randomized, controlled clinical trial of plasma exchange with albumin replacement for Alzheimer’s disease
1Research & Innovation Unit, Althaia Xarxa Assistencial Universitària De Manresa - Manresa (Spain), 2Department Of Nuclear Medicine, Hospital Universitari Vall D’hebrón, Universitat Autònoma De Barcelona - Barcelona (Spain), 3Alzheimer’s Research Group, Grifols - Barcelona (Spain), 4Research Center And Memory Clinic, Fundació Ace, Institut Català De Neurociències Aplicades-Universitat Internacional De Catalunya - Barcelona (Spain), 5Centro de Investigación Biomédica en Red de Enfermedades Neurodegenerativas (CIBERNED), Instituto de Salud Carlos III - Madrid (Spain), 6Departments Of Neurology And Psychiatry, University Of Pittsburgh School Of Medicine - Pittsburgh, Pennsylvania (United States)

P31 Greater sleep disturbance is associated with lower myelin content in the cingulum in a cohort enriched for Alzheimer’s disease risk
K.L. Yang 1, D.C. Dean 2, 3, 4, J.M. Oh 1, N. Davenport-Sis 1, D.T. Plante 5, B.A. Riedner 5, S. Asthana 1, 6, 7, S.C. Johnson 1, 6, 7, A. Alexander 3, 4, B.B. Bendlin 1, 6, 7
1Wisconsin Alzheimer’s Disease Research Center, University Of Wisconsin - Madison (United States), 2Department Of Pediatrics, University Of Wisconsin - Madison (United States), 3Department Of Medical Physics, University Of Wisconsin - Madison (United States), 4Waisman Center, University of Wisconsin - Madison (United States), 5Wisconsin Institute For Sleep And Consciousness, University Of Wisconsin - Madison (United States), 6Wisconsin Alzheimer’s Institute, University Of Wisconsin - Madison (United States), 7Geriatric Research Education and Clinical Center, William S. Middleton Veterans Hospital - Madison (United States)

P32 Cerebellar atrophy can predict conversion of amnestic mild cognitive impairment to dementia in patient with amyloid negative
H.J. Kim 1, S. Lee 1, S. Jo 1, J.H. Lee 1
Department Of Neurology, Asan Medical Center, University Of Ulsan College Of Medicine - Songpa-Gu, Seoul (Korea, Republic of)

P33 Early impairment in the ventral visual pathway can predict conversion to dementia in patients with amnoid-negative amnestic mild cognitive impairment
H.J. Kim 1, E.N. Cheong 2, S. Jo 1, S. Lee 1, W.H. Shim 3, J.H. Lee 1
1Department Of Neurology, Asan Medical Center, University Of Ulsan College Of Medicine - Songpa-Gu, Seoul (Korea, Republic of), 2Department Of Medical Science And Asan Medical Institute Of Convergence Science And Technology, Asan Medical Center, University Of Ulsan College Of Medicine - Songpa-Gu, Seoul (Korea, Republic of), 3Health Innovation Big Data Center, Asan Institute Of Life Sciences, Department Of Radiology And Research Institute Of Radiology, Asan Medical Center, University Of Ulsan College Of Medicine - Songpa-Gu, Seoul (Korea, Republic of)

P34 Prognosis of mild cognitive impairment of uncertain etiology: Assessment and analysis of concordant cases from the IDEAS study
D. Weidman 1, V. Ghisays 1, H. Protas 1, Y. Chen 1, V. Devadas 1, G. Sideraous 1, Y. Su 1
Banner Alzheimer's Institute - Phoenix (United States)

P35 The effect of cerebral amyloid angiopathy on regional cortical atrophy, independent of cortical amyloid pathology
S. Jo 1, E.N. Cheong 1, H.J. Kim 1, S.J. Lee 1, J.H. Lee 1
Asan Medical Center - Seoul (Korea, Republic of)
Effect of multidomain interventions on brain functional connectivity of elderly people with spontaneous memory complaint

LP05 Regional Retinal Amyloid Imaging in a Cohort of Patients with Mild Cognitive Impairment

LP06 The effects of home-based, robot cognitive intervention on the functional brain network in patients with mild cognitive impairment

Update on Ideas and New Ideas Studies

Clinical trials: biomarkers including plasma

P40 Bio-Hermes: A Biomarker Study Initiated By The Global Alzheimer’s Platform Foundation® To Compare Select Digital and Blood-Based Biomarkers With Clinical Diagnosis and Amyloid-β PET Images

P41 Down Syndrome Associated Alzheimer’s Disease: Early Data from the Longitudinal Investigation for Enhancing Down Syndrome Research (LIFE-DSR) Study

P42 Studies on the Practical Performance of a Plasma Amyloid β Measurement System by Immunoprecipitation Combined with MALDI-TOF Mass Spectrometry

Identification of ADAMTS4 as an Amyloid Precursor Protein Cleaving Enzyme at 669 Site in APP669-711 Production Pathway
P44  Identification of prognostic protein biomarkers for cognitive dysfunction in the Origin trial  
S. Hess 1  
Sanofi - Frankfurt (Germany)

P45  Deep Proteomic Profiling of AD CSF for Unbiased Biomarker Discovery and Subject Stratification  
Y. Feng 1, R. Bruderer 1, D. Heinzmann 1, L. Reiter 1  
Biognosys - Schlieren (Switzerland)

P46  Antibody free, Mass Spectrometric procedure for the determination of Aβ40 and Aβ42 in human plasma  
L. Sarasa 1, P. Pesini 1, M. Sarasa 1, J.A. Allué 1  
Araclon Biotech - Zaragoza (Spain)

P47  Cholesterol and triglyceride levels in Alzheimer’s disease patients undergoing therapeutic plasma exchange with albumin replacement  
A.M. Ortiz 1, C. Minguet 1, L. Nuñez 1, A. Ruiz 2, 3, O.L. Lopez 4, M. Boada 2, 3, A. Páez 1, M. Costa 1  
1Alzheimer’s Research Group, Grifols - Barcelona (Spain), 2Research Center and Memory Clinic, Fundación Ace, Institut Catalá De Neurociències Aplicades-Universitat Internacional De Catalunya - Barcelona (Spain), 3Centre de Investigació Biomèdica en Red de Enfermesdades Neurodegeneratives (CIBERNED), Instituto de Salud Carlos III - Madrid (Spain), 4Departments of Neurology and Psychiatry, University of Pittsburgh School of Medicine - Pittsburgh, Pennsylvania (United States)

P48  PK/PD model of the effects of the anti-Sortilin antibody AL001 in humans  
M. Wang 1, R. Paul 1, F. Yeh 1, H. Long 1, O. Siddiqui 1, M. Hagey 1, I. Siah 1, T. Schwabe 1, S. Kathman 2, C. Hines 2  
1Alector - South San Francisco, CA (United States), 2PPD - Wilmington, NC (United States)

P49  Platelet-miRNAs as biomarkers for dementia with Lewy bodies  
A. Gamez-Valero 1, D. Vilas 2, L. Ispierto 2, F. Borras 1, R. Alvarez 1, K. Reyer 1  
1Research Institute Germans Trias I Pujol (Spain), 2University Hospital Germans Trias I Pujol (Spain)

P50  Elecsys CSF assays accurately distinguish AD from frontotemporal lobar degeneration  
M. Ortner 1, O. Goldhardt 1, J.P. Weinberger 2, F. Müller-Sarnowski 1, J. Diehl-Schmid 1, H. Förstl 1, I. Yakushev 3, T. Grimmer 1  
1Department of Psychiatry and Psychotherapy, Klinikum Rechts Der Isar, Technical University of Munich, School of Medicine - Munich (Germany), 2Roche Diagnostics GmbH - Penzberg (Germany), 3Department of Nuclear Medicine, Klinikum Rechts Der Isar, Technical University of Munich - Munich (Germany)

P51  Using cortical diffusivity analysis to predict progression in early Alzheimer’s Disease  
M. Torso 1, I. Hardingham 1, M. Jenkinson 2, S. Chance 1  
1Oxford Brain Diagnostics - Oxford (United Kingdom), 2University of Oxford - Oxford (United Kingdom)

P52  Level of neurodegeneration-inducing memory CDr1 cells predicts Alzheimer’s disease and Alzheimer’s-related MCI, and correlates with cognitive decline in banked blood samples from multiple cohorts  
C. Wheeler 1, D. Van Dam 2, Y. Vermeiren 2, H. De Reu 2, V. Van Tendeloo 2, P.P. De Deyn 3, K. Trujillo 1  
1Neuro Pharma, Inc. - Albuquerque (United States), 2University of Antwerp - Antwerp (Belgium), 3University of Antwerp, University Center Groningen - Groningen (Netherlands)

P53  Transcranial Electromagnetic Treatment (TEMT) Normalizes Plasma Cytokine Levels in Alzheimer’s Patients: Both Immediate and Long-term Immunoregulation  
H. Abulaban 1, R. Baranowski 2, X. Lin 3, E. Goodwin 4, B. Gordon 4, A. Gary 4, C. Cao 3  
1Axion Clinical Research of Florida - Tampa (United States), 2Left Coast Engineering - Escondido (United States), 3University of South Florida Taneja College of Pharmacy - Tampa (United States), 4Neuroem Therapeutics, Inc. - Phoenix (United States)

LP08  The analytical assessment of three research Simoa assays for plasma measurement of phosphorylated tau (pT181, pT217, pT231)  
Jeroen Vanbrabant (1), Erik Stoops (1), Kaj Blennow (2,3), Eugeen Vanmechelen (1)  
1Adx Neurosciences Nv, Belgium, 2Department Of Psychiatry And Neurochemistry, The Sahlgrenska Academy At The University Of Gothenburg, Sweden, 3Clinical Neurochemistry Laboratory, Sweden

LP09  Blood-based Detection of Early-stage Alzheimer’s Using Multiomics and Machine Learning  
B. Souchet 1, A. Michail 1, B. Billoir 1, F. Mouton-Ligier 2, 3, 4, J. Fortea 5, 6, 7, A. Lleo 6, 7, C. Paquet 2, 3, 4, J. Braudeau 1  
1Agent - Paris (France), 2Université De Paris - Paris (France), 3Centre de Neurologie Cognitive Hospital LARIBOISIÈRE Paris APHP - Paris (France), 4INSERM U1144 - Paris (France), 5Barcelona Down Medical Center, Fundacion Catalana De Sindrome De Down - Barcelona (Spain), 6Sant Pau Memory Unit, Department of Neurology, Hospital de la Santa Creu i Sant Pau, Biomedical Research Institute Sant Pau, Universitat Autonoma de Barcelona - Barcelona (Spain), 7Center of Biomedical Investigation Network for Neurodegenerative Diseases - Madrid (Spain)

LP10  Plasma Aβ ratio measured on a fully automated immunoassay predicts amyloid positivity defined by amyloid PET centiloid  
K. Yamashita 1, S. Watanabe 1, K. Matsumoto 1, M. Miura 1, T. Iino 1, T. Watanabe 2, S. Iwanaga 1, D. Verbel 3, M. Kanekiyo 3, S. Dhadda 3, M. Ino 4, A. Koyama 3, T. Yoshida 1  
1Sysmex Corporation - Kobe (Japan), 2Sysmex R&D Center Americas, Inc. - Mundelein (United States), 3Eisai Inc. - Woodcliff Lake (United States), 4Eisai Co., Ltd. - Tsukuba (Japan)
**POSTER PRESENTATIONS**

**LP11** Biomarkers of response to nabilone in agitated patients with moderate-to-severe Alzheimer's disease patients  
M. Ruthirakuhan 1, N. Herrmann 1, A.C. Andreazza 2, N.P.L.G. Verhoeff 3, D. Gallagher 1, S.E. Black 1, K.L. Lanctot 1  
1Sunnybrook Research Institute - Toronto (Canada), 2University Of Toronto - Toronto (Canada), 3Baycrest Health Sciences - Toronto (Canada)

**LP12** Pre-Analytical Effects of Cap Contact, Temperature, and Mixing on CSF Aβ1–42 Concentrations when Measured on an Automated Chemiluminescent Platform  
J. Darrow 1, R. Esquivel 2, S. Gannon 2, A. Calabro 2, J. Lantham 2, A. Orusakwe 2, N. Benina 2, A. Rao 1, S. Gulyani 1, K. Khingelova 1, K. Bandeen-Roche 1, M. Albert 1, A. Kapoor 1, A. Moghekar 1  
1Johns Hopkins - Baltimore (United States), 2Fujirebio Diagnostics, Inc. - Malvern (United States)

**THEME 5** Clinical trials: cognitive and functional endpoints

**P54** The effect of multi-tasking exercise intervention on cognitive function in elderly and cognitive impairment patients: a pilot multicenter study  
K.W. Park 1, H.J. Lee 2, H. Park 3  
1Dong-A University College of Medicine - Busan (Korea, Republic of), 2Busan Metropolitan Dementia Center - Busan (Korea, Republic of), 3Dong-A University - Busan (Korea, Republic of)

**P56** Exercise and carbohydrate-restricted diet associates with improved insulin resistance and cognitive performance  
M.B. Heston 1, J.M. Gaitan 1, Y. Ma 1, B. Derynda 1, S. Luse 1, M.P. Kozuch 1, A.C. Gretebeck 2, 5, 6, R.J. Gretebeck 5, 7, B.B. Bendlin 1  
1Wisconsin Alzheimer's Disease Research Center, University Of Wisconsin School Of Medicine And Public Health - Madison (United States), 2Cellular and Molecular Pathology, University of Wisconsin-Madison - Madison (United States), 3Nova Southeastern University - Davie (United States), 4Rollins School of Public Health, Emory University - Atlanta (United States), 5College Of Nursing, Marquette University - Milwaukee (United States), 6School of Nursing, University of Wisconsin-Madison - Madison (United States), 7Department of Exercise and Sport Science, University of Wisconsin-La Crosse - La Crosse (United States)

**P57** Real-time capture of gait and actigraphy using industry-grade wearable devices in older adults with and without subjective cognitive decline: Preliminary compliance, sensitivity, and correlations with cognition  
A. Atkins 1, W. Horan 1, M. Kraus 1, J. Linthicum 1, R. Keefe 1  
Verasci - Durham, NC (United States)

**THEME 6** Cognitive assessment and clinical trials

**P58** Using speech measures as prognostic markers of rapid cognitive decline: Applications to clinical trial enrichment  
K. Mueller 1, R. Kosick 1, S. Hahn 2, G. Stegmann 2, J. Liss 2, V. Berisha 2  
1University of Wisconsin-Madison - Madison, WI (United States), 2Arizona State University - Tempe, AZ (United States)

**P59** Generation of an optimized neuropsychological feature set for the quick screening of mild cognitive impairment in clinical settings  
M.J. Kleinman 1, J. Galvin 1  
1University of Miami Miller School Of Medicine - Miami, FL (United States)

**P60** Congruence of clinical assessment instruments with online narratives over social media by patients with Alzheimer's disease and caregivers  
A. Tahami 1, Y. Stern 2, S. Doogan 3, Q. Zhang 1  
1Eisai, Inc. - Woodcliff Lake (United States), 2Columbia University - New York (United States), 3Real Life Sciences, Inc. - New York (United States)

**P61** Remote assessment of speech and language changes in Primary Progressive Aphasia (PPA) and behavioral variant FTD  
J. Bobut 1, M. Xu 1, I. Kaufman 1, M. Hagey 2, R. Paul 2, O. Siddiqui 2, M. Ward 2, W. Simpson 1, 3  
1Winterlight Labs - Toronto (Canada), 2Vector, Inc. - South San Francisco, CA (United States), 3McMaster University - Hamilton (Canada)

**P63** Cognitive Profiles of Common Neurological Co-morbidities: A Review of Systematic Reviews  
C. Ganzer 1, A. Seifan 2  
1Hunter College School of Nursing - New York, NY (United States), 2The Neuro Well Free Corporation - Miami Beach, FL (United States)
POSTER PRESENTATIONS

P64 Insulin resistance and longitudinal cognition in middle-aged and older adults
G. Ennis 1, E. Jonaitis 1, R. Kosick 1, L. Clark 1, S. Bouges 1, T. James 1, N. Chin 1, C. Engelman 1, R. Anderson 1, S. Asthana 1, S. Johnson 1, B. Bendlin 1
University of Wisconsin-Madison - Madison, WI (United States)

P65 Polygenic Risk for Alzheimer’s Disease Predicts MMSE Decline in APOE Positive Older Adults
A. Moore 1, J. Cara 1, L. Schneider 2, A. Torkamani 3, C. Cruchaga 4, J. Collens 1
1Vivid Genomics - San Diego, CA (United States), 2Departments Of Neurology, Psychiatry and Behavioral Sciences, Keck School Of Medicine, University Of Southern California - Los Angeles, CA (United States), 3Scripps Research Translational Institute - La Jolla, CA (United States), 4Knight Alzheimer's Disease Research Center, Washington University School Of Medicine - St. Louis, MI (United States)

P66 Toward Discriminating Alzheimer’s Disease from Other Dementia Disorders with Modeled Cognitive Processes
J.R. Bock 1, M.D. Lee 2, W.R. Shankle 1, 2, 3, J. Hara 1, 3, D. Fortier 1, T. Mangrola 1
1Medical Care Corporation - Newport Beach, CA (United States), 2Dept. Of Cognitive Sciences, University of California At Irvine – Irvine, CA (United States), 3Pickup Family Neuroscience Institute, Hoag Memorial Hospital - Newport Beach, CA (United States)

P67 Clinical correlates of types of memory complaints in subjective cognitive decline and amnestic mild cognitive impairment
S.Y. Ryu 1, S.B. Lee 1, J.J. Lee 1, Y.J. Jung 1
The Catholic University of Korea, Daejeon St. Mary's Hospital - Daejeon (Korea, Republic of)

LP13 Predictive model incorporating polygenic risk score for Alzheimer’s Disease predicts MMSE decline in APOE4 carriers and noncarriers
A. Moore 1, J. Cara 1, A. Torkamani 2, L. Schneider 3, J. Collens 1
1Vivid Genomics - San Diego (United States), 2Scripps Research Translational Institute - La Jolla (United States), 3Keck School Of Medicine Of The University Of Southern California - Los Angeles (United States)

THEME 8
Health economics and clinical trials

P69 Mortality Risk and Use of Long-Term Custodial Care for Patients With Dementia and Psychosis Versus Patients With Dementia Only: A Longitudinal, Matched Cohort Analysis of Medicare Claims Data
N. Rashid 1, J. Wetmore 2, 3, M. Irfan 4, V. Abler 1
1ACADIA Pharmaceuticals, Inc. - San Diego, CA (United States), 2Chronic Disease Research Group – Minneapolis, MN (United States), 3Hennepin County Medical Center – Minneapolis, MN (United States), 4University Of Minnesota And Veterans Affairs Medical Center – Minneapolis, MN (United States)

P70 Estimating progression rates across the spectrum of Alzheimer’s disease for amyloid positive individuals using National Alzheimer’s Coordinating Center data
M. Potashman 1, M. Buessing 2, M. Levitchi Benea 1, J. Cummings 3, 4, S. Borson 5, P. Pemberton Ross 6, A.J. Epstein 2
1Biogen – Cambridge, MA (United States), 2Medicus Economics – Boston, MA (United States), 3Chambers-Grundy Center For Transformative Neuroscience Unlv - Las Vegas, NV(United States), 4Cleveland Clinic Lou Ruvo Center for Brain Health - Las Vegas, NV(United States), 5University Of Washington - Seattle, WA (United States), 6Biogen - Baar (Switzerland)

P71 Comparative efficacy, safety, tolerability, and effectiveness of antipsychotics in the treatment of dementia related psychosis (ORP): A systematic literature review
I. Yunusa 1, N. Rashid 2, S. Chaugule 1, V. Abler 2, K. Rajagopalan 1
1An-L-It-Iks, Inc – Boston, MA (United States), 2Acadia Pharmaceuticals, Inc - San Diego, CA (United States)

P72 Caregiver perspectives on the burden and impact of agitation in caring for loved ones with Dementia/Alzheimer’s disease: A collaboration with UsAgainstAlzheimer’s A-LIST®
M. Sanon Aigbogun 1, M. Cloutier 2, E. Serra 2, T. Frangiosa 3, V. Biggar 3, R. Baker 1, M. Michael 4, H. Gandhi 1, M. Gauthier-Loiselle 2
1Otsuka Pharmaceutical Development & Commercialization, Inc. – Princeton, NJ (United States), 2Analysis Group, Inc. - Montreal (Canada), 3Usagainst Alzheimer’s – Washington, DC (United States), 4Otsuka America Pharmaceutical, Inc. – Princeton, NJ (United States)
THEME 9
Epidemiology and clinical trials

P74 Comparing Alzheimer's disease (AD) progression in Alzheimer's Disease Neuroimaging Institute (ADNI) subjects with mild cognitive impairment (MCI) to progression observed in the SCArlet RoAD clinical trial
S. Yiu 1, F. Model 2, L. Butler 2, C. Gower-Page 1, X. Teitsma 2, P. Delmar 2
1 Roche Products Limited - Welwyn Garden City (United Kingdom), 2 F. Hoffmann-La Roche Ltd - Basel (Switzerland)

P75 Impact of pimavanserin treatment on motor function in patients with neurodegenerative disease: results from 3 clinical studies
D. Weintraub 1, E.P. Foff 2, C. Ballard 3, B. Coate 2, G. Demos 2, A. Berrio 2, B. Abbs 2, J.M. Youakim 2, S. Stankovic 2
1 Departments of Psychiatry and Neurology, Perelman School of Medicine at the University of Pennsylvania - Philadelphia (United States), 2 ACADIA Pharmaceuticals, Inc. - Princeton (United States), 3 University Of Exeter Medical School - Exeter (United Kingdom)

P76 A phase 2a, open-label multicenter study to evaluate the safety and tolerability of repeated intrathecal administration of NurOwn® (autologous mesenchymal stem cells secreting neurotrophic factors) in patients with prodromal to mild Alzheimer's Disease
B. Dubois 1, B. Kern 2, S. Lindborg 2, C. Lebovits 2, P. Scheltens 3
1 Salpêtrière University Hospital - Paris (France), 2 Brainstorm Cell Therapeutics - New York (United States), 3 Amsterdam UMC - Amsterdam (Netherlands)

P77 The epigenetic BET protein inhibitor apabetalone counters brain endothelial activation and monocyte adhesion
E. Kulikowski 1, S. Wasiak 1, L. Fu 1, E. Daze 1, D. Gilham 1, B. Rakai 1, S. Stotz 1, L. Tsujikawa 1, C. Sarsons 1, D. Studer 2, K. Rinker 2, R. Jahagirdar 1, N. Wong 1, M. Sweeney 1, J. Johansson 1
1 Resverlogix Corp - Calgary (Canada), 2 University Of Calgary - Calgary (Canada)

P78 ACD856, a novel cognitive enhancer targeting neurotrophin signaling for the treatment of Alzheimer's Disease
P. Forsell 1, G. Nordvall 1, M. Halldin 1, M. Dahlström 1, N. Madjid 1, M. Rother 1, A. Van Es Johansson 1, J. Lundkvist 1, M. Erkidosetter 2, M. Jönnson 1, B. Winblad 2, J. Sandin 1
1 Alzecure Pharma Ab - Huddinge (Sweden), 2 Department Of Neurobiology, Care Sciences And Society, Karolinska Institutet - Stockholm (Sweden), 3 Department Of Geriatric Medicine, Karolinska University Hospital - Huddinge (Sweden)

P79 Therapeutic efficacy of a small molecule inhibitor targeting tau self-association in mouse models of taupathy
J. Moe 1, P. Lopez 1, H. Jimenez-Bravar 2, L. Adrien 2, J. Eun 2, A. Wolin 2, J. Koppel 2, P. Davies 2, E. Davidowitz 1
1 Oligomerix, Inc. - White Plains (United States), 2 The Litwin-Zucker Research Center For The Study Of Alzheimer's Disease, The Feinstein Institute For Medical Research, Northwell Health - Manhasset (United States)

P80 Development of a Dual Aβ-Tau Vaccine for the Prevention and Treatment of Alzheimer's Disease
R. Barbour 1, F. Bard 1, A. Elmarrouf 1, H. Prill 1, K. Thomas 1, G. Kinney 1, W. Zago 1
Prothena Biosciences Inc - South San Francisco, CA (United States)

M. Skov 1, R. Barbour 1, P. Dolan 1, A. Elmarrouf 1, E. Goldbach 1, M. Holden 1, L. Li 1, N. Nijjar 1, H. Prill 1, J. Salmans 1, K. Thomas 1, S. Tam 1, C. Tourino 1, F. Bard 1, G. Kinney 1, Z. Wagner 1
Prothena Biosciences Inc - South San Francisco, CA (United States)

P82 Gamma-secretase modulators show selectivity for gamma-secretase-mediated amyloid precursor protein intramembrane processing
1 Alzecure Pharma - Stockholm (Sweden), 2 Department Of Neurobiology, Care And Society, Karolinska Institutet - Solna (Sweden), 3 Aesculap AG - Tuttingen (Germany), 4 Department Of Psychiatry And Neurochemistry, Institute Of Neuroscience And Physiology, The Sahlgrenska Academy At The University Of Gothenburg - Gothenburg (Sweden), 5 Clinical Neurochemistry Laboratory, Sahlgrenska University Hospital - Mölndal (Sweden), 6 Mabtech AB - Stockholm (Sweden), 7 Department Of Obstetrics And Gynecology, First Affiliated Hospital Of Nanjing Medical University, Nanjing, Jiangsu - Nanjing (China), 8 Department Of Neurodegenerative Disease, UCL Institute Of Neurology - London (United Kingdom)
**POSTER PRESENTATIONS**

**P83** Predicting Response to Virtual Reality Therapy for Treatment of BPSD in Acute-care Settings  
1 York University - Toronto (Canada), 2 University Of Toronto - Toronto (Canada), 3 Uhn - Toronto (Canada)

**P84** Administering Virtual Reality Therapy to Manage Behavioural and Psychological Symptoms in Patients with Dementia Admitted to an Acute-care Hospital: Results of a Pilot Study  
L. Appel 1, E. Kisonas 2, E. Appel 2, D. Bartlett 3, J. Klein 1, J. Rosenberg 4, C. Smith 4  
1 York University - Toronto (Canada), 2 Uhn - Toronto (Canada), 3 York U - Toronto (Canada), 4 Mgh - Toronto (Canada)

**P85** Introducing Virtual Reality therapy for inpatients with dementia admitted to an acute-care hospital: Learnings from a pilot to pave the way to a randomized controlled trial  
L. Appel 1, E. Kisonas 2, J. Klein 3, D. Bartlett 3, J. Rosenberg 4, C. Smith 4  
1 York University - Toronto (Canada), 2 Uhn - Toronto (Canada), 3 York U - Toronto (Canada), 4 Mgh - Toronto (Canada)

**P86** Non-invasive gamma sensory stimulation for the treatment of Alzheimer's disease: interim safety and feasibility from multiple prospective clinical studies evaluating long-term, home use  
Z. Malchano 1, E. Hempel 1, A. Boasso 1, N. Myrthil 1, K. Martin 1, N. Strozewski 1, T. Travers 1, K. Kwan 1, C. Cotter 1, M. Williams 1, A. Cimenser 1, M. Hajos 1  
Cognito Therapeutics - Cambridge, MA (United States)

**THEME 12**  
Proof of concept/translational research in AD

**P88** Regular Running can Prevent AD by Enhancing Hippocampal Proliferation  
X. Bo 1, Z. Xianliang 1  
School of Physical Education & Health Care, East China Normal University - Shanghai (China)

**P89** Effects of THN20L, a combination of donepezil and low dose mefloquine, on cognition and quantitative EEG in healthy subjects during a scopolamine challenge  
T. Dondaine 1, D. Deglanque 1, O. Blin 2, C. Cracowski 3, P.O. Girodet 4, G. Pickering 5, S. Chalamas 6, F. Mouthon 7, W. Charvériat 7, W. Rein 7, R. Bordet 1  
1 Tulle University - Lille (France), 2 Marseille University - Marseille (France), 3 Grenoble University - Grenoble (France), 4 Bordeaux University - Bordeaux (France), 5 Clermont-Ferrand University - Clermont-Ferrand (France), 6 Toulouse University - Toulouse (France), 7 Theraneau - Fontenay Aux Roses (France)

**P90** Reduced non-fibrillar Aβ species in a patient treated with low doses of BACE1 inhibitor  
M. Querol-Vilaseca 1, 2, S. Sirisi 1, 2, L. Molina-Porcel 3, 4, B. Molina 1, 2, J. Pegauresolles 1, 2, P. Ferrer-Raventós 1, 2, R. Nuñez-Llaves 1, 2, R. Blesa 1, 2, O. Belbin 1, 2, J. Fortea 1, 2, R. Sánchez-Valle 3, 4, A. Lleó 1, 2  
1 Memory Unit, Department of Neurology, Institut d’Investigacions Biomèdiques Sant Pau-Hospital De Sant Pau, Universitat Autònoma de Barcelona, Barcelona, Spain. - Barcelona (Spain), 2 Centro de Investigación Biomédica en Red en Enfermedades Neurodegenerativas (CIBERNED), Madrid, Spain. - Madrid (Spain), 3 Neurological Tissue Bank Of The Biobank-Hospital Clinic-Idibaps, Barcelona Spain. - Barcelona (Spain), 4 Alzheimer’s disease and other cognitive disorders unit. Neurology Service, Hospital Clinic de Barcelona-IDIBAPS, Barcelona Spain - Barcelona (Spain)

**P91** Independent validation of EuroPOND Alzheimer’s disease staging model on real-world clinical data  
M.M.J. Wittens 1, D.M. Sima 2, A. Brys 2, E. De Roeck 1, H. Struyfs 1, E. Niemantsverdriet 1, M. Bellio 3, N. Oxtoby 3, D. Alexander 3, A. Ribbens 2, S. Engelborghs 1, 4  
1 Dep. Of Biomedical Sciences, Institute Born-Bunge, University Of Antwerp - Antwerpen (Belgium), 2 Centre for Medical Image Computing, Department Of Computer Science, U C L - London (United Kingdom), 3 Dep. of Neurology and Center for Neurosciences, UZ Brussel and Vrije Universiteit Brussel (VUB) - Jette (Belgium)

**P93** Quantitative Systems Pharmacology model of tau spreading in AD to enable the development of anti-tau therapies  
L. Wille 1, J. Grant 1, S. Iadevaia 2, H. Abdul 1, K. Madrasi 1, A. Simen 2, A.J. Schwarz 2, M. Quinton 2, H. Faessel 2, F. Hua 1, J. Apgar 1, J. Burke 1, M. Vakilynajad 2  
1 Applied Biomath - Concord, MA (United States), 2 Takeda - Cambridge, MA (United States)

**P94** Investigating the Global Proteomic Impact and Translational Implications of Tolfenamic Acid Treatment  
J. Hill 1, N. Zawia 1, 2, 3  
1 Department of Biomedical and Pharmaceutical Sciences, University of Rhode Island - Kingston, RI (United States), 2 Interdisciplinary Neuroscience Program, University of Rhode Island, - Kingston, RI (United States), 3 George and Anne Ryan Institute for Neuroscience, University of Rhode Island – Kingston, RI (United States)
The lack of c-Abl improves behavioral performance in an animal model of Alzheimer’s disease
A. Alvarez 1, R. León 1, C. Riquelme 1, S. Zanlungo 2, A. Dulcey 3, J. Marugan 3
1Cell Signaling Laboratory, Department of Cell and Molecular Biology, Biological Sciences Faculty, Care-Uc, P. Universidad Catolica De Chile - Santiago (Chile), 2Gastroenterology Department, School of Medicine, P. Universidad Catolica De Chile - Santiago (Chile), 3Ncats-NIH Chemical Genomic Center – Bethesda, MD (United States)

Peripheral inflammation, cognitive impairment and AD-related hippocampal neurodegeneration in prodromal AD patients
M. Marizzoni 1, T. Chevalier 2, N. Lopizzo 1, D. Albani 3, G. Forloni 3, J. Jovicich 4, A. Cataneo 1, G. Frisoni 2
1Irccs Istituto Centro San Giovanni Di Dio Fatebenefratelli - Brescia (Italy), 2University Hospitals And University Of Geneva - Geneva (Switzerland), 3Irccs Istituto Di Ricerche Farmacologiche “maria Negri” - Milano (Italy), 4Center For Mind/brain Sciences - Trento (Italy)

CS823 ABC1 agonist treatment in cynomolgus monkeys reduces cerebrospinal fluid concentrations of Aβ42, Aβ40, APP and AP2B1 in dose-response manner
1Artery Therapeutics, Inc. - San Ramon, CA (United States), 2Usc - Los Angeles (United States), 3Tel Aviv University - Tel Aviv (Israel), 4Artery Therapeutics, Inc. - San Ramon (United States), 5U Of Gothenburg - Gothenburg (Sweden), 6Karolinska Institutet - Stockholm (Sweden), 7Univ - Las Vegas (United States)

Evaluation of speech-based digital biomarkers for Alzheimer’s disease
J. Robin 1, L. Kaufman 1, W. Simpson 1, 2
1Winterlight Labs - Toronto (Canada), 2McMaster University - Hamilton (Canada)

Developing and assessing a digitally supported care management programme for caregivers of people with dementia: A cluster-randomised controlled trial (GAIN)
O.A. Klein 1, J.R. Thyrion 2, M. Boekholt 2, D. Afin 2, C. Dornquast 2, M. Lindner 2, B. Michalowski 2, J. Zwingmann 3, A. Dreier-Wolfgramm 4, S. Teipel 1, W. Hoffmann 2, I. Kilimann 1
1German Center For Neurodegenerative Diseases - Rostock (Germany), 2German Center For Neurodegenerative Diseases - Greifswald (Germany), 3European University Of Applied Sciences - Rostock (Germany), 4Hamburg University Of Applied Sciences - Hamburg (Germany)

Validating virtual tools for remote sampling of neurological function: comparing task-driven EEG in the lab and in the home
B. Murphy 1, F. Babiray 1, A. Buick 2, J. Dyer 1, H. Nolan 1
1Brainwavebank Ltd. - Dublin (Ireland), 2Brainwavebank Ltd. - Belfast (United Kingdom)

Measurement of Alzheimer’s Disease symptomatology using remote smartphone-based assessment of visual and auditory behavior
A. Abbas 1, A. Paley 1, I. Galatzer-Levy 1
Aicure - New York (United States)

Automated administration of Serial Subtraction in a remote data collection context: novel timing features related to task difficulty and participant demographics
N. Taptiklis 1, B. Jennifer 1, 2, F. Francesca 1, 2
1Cambridge Cognition - Cambridge (United Kingdom), 2Dept. Psychiatry, University of Cambridge - Cambridge (United Kingdom)

Feasibility, acceptability and effects on clinical outcomes of a web-based multidomain lifestyle intervention in older adults: the eMIND randomized controlled trial
P. De Souto Barreto 1, K. Pothier 2, G. Soriano 1, M. Lussier 3, L. Bherer 3, S. Guyonnet 1, A. Piau 1, P.J. Ousset 1, B. Vellas 1
1Gerontopole Of Toulouse - Toulouse (France), 2University Of Tours - Tours (France), 3Université De Montreal - Montreal (Canada)

Reinventing Alzheimer’s Disease Prescreening: The Global Alzheimer’s Platform Foundation® (GAP) Remote Recruitment and Prescreening Program
L. Zisko 1, C. Cordell 1, J. Smith 1, J. Trotter 1, L. Thurman 1, J. Sipchen 1
Global Alzheimer’s Platform Foundation (gap) - Washington (United States)