

BLANCHETTE ROCKEFELLER

NEUROSCIENCES
INSTITUTE
at West Virginia University.

**Third Annual West Virginia Biosciences
Summit
February 28, 2013**

In Memory

- Founded in 1999 by the Rockefeller Family in memory of Blanchette Hooker Ferry Rockefeller
- We are a unique, independent, non-profit institute dedicated to the study



Research Facilities

- \$30 million research headquarters, dedicated in October 2008
- 78,000-square-foot facility can accommodate scientific work of up to 125 scientists



BRNI's Efforts to Address Alzheimer's

- Alzheimer's Outreach and Registry Program (AORP)
- Diagnostics
- Therapeutics



AORP CME Sessions

- Alzheimer's Disease Update for Physicians
- Diagnosing and Treating Alzheimer's Disease: The Latest Developments
- Behavioral and Psychological Symptoms in Dementia
- Palliative Care in Dementia
- Certification in Alzheimer's/Dementia Care



BRNI is a hybrid

- Rockville lab is a commercial enterprise testing an Alzheimer's diagnostic
- Morgantown lab has two distinct units:
 - NIH-funded basic research lab
 - Institute-funded translational research lab



Diagnostic Work

- Last year BRNI initiated a phase 3 trial and collected 142 samples from 5 sites worldwide
- Autopsy–confirmations have been obtained from 17 patients.
- Based on autopsy validation, the BRNI biomarker had a 97 percent level of



Therapeutic Work

- Phase IIa clinical trial approved in April 2010
- Funding obstacle to conducting trial
- Another opportunity for advancing therapeutics

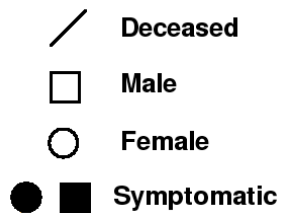
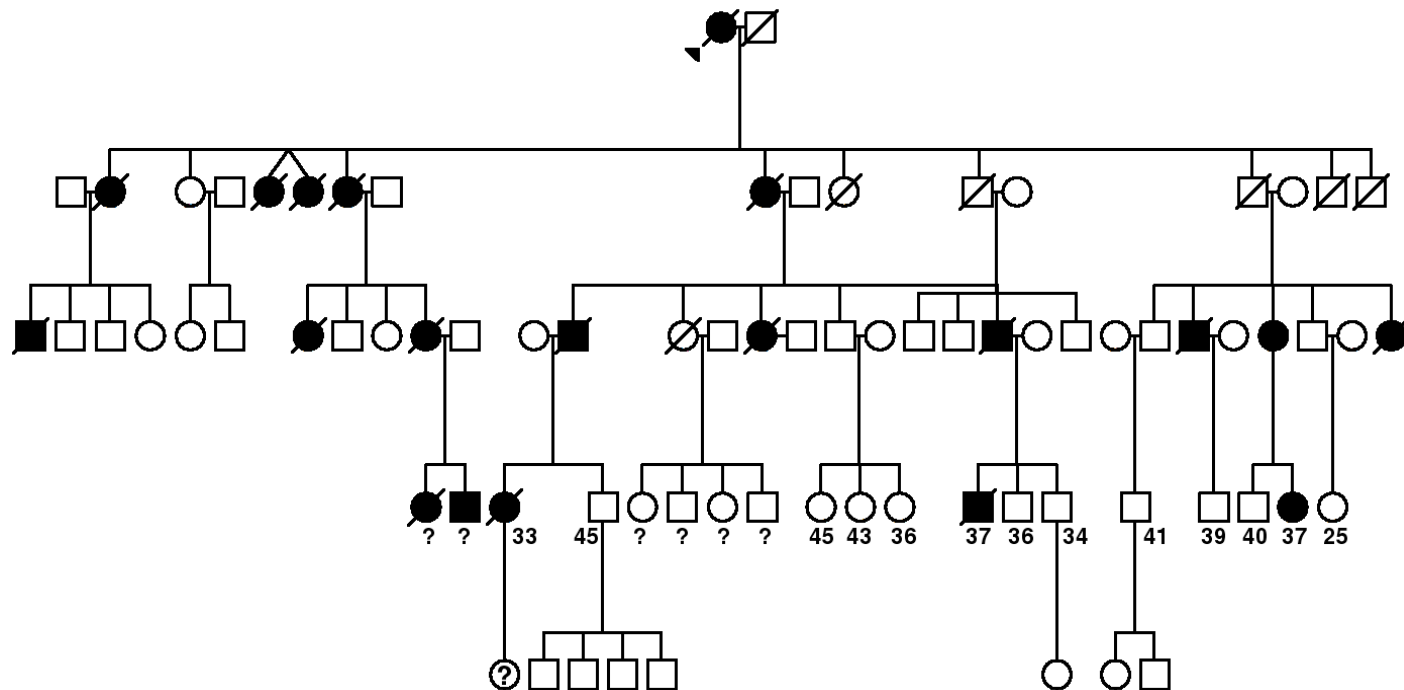


Origin

- Family contacts BRNI for therapeutic help
- Initial conversations reveal an unusual form of dementia
- A grant was secured from a private foundation to fund personnel
- BRNI purchases software necessary to develop pedigree.



Family Pedigree



Pedigree Analysis

- Pedigree reveals a genetic dementia which is autosomal dominant
- Genetic analysis for two siblings descended from the WV family who reside(d) in MI
- IRB for blood draw and genotyping completed
- Blood drawn on 7/12 and genotyping completed 09/12



Early-Onset Autosomal Dominant Alzheimer Disease: Prevalence, Genetic Heterogeneity, and Mutation Spectrum

Dominique Campion,¹ Cécile Dumanchin,¹ Didier Hannequin,¹ Bruno Dubois,² Serge Belliard,⁵ Michèle Puel,⁶ Catherine Thomas-Anterion,⁷ Agnès Michon,² Cosette Martin,¹ Françoise Charbonnier,¹ Grégory Raux,¹ Agnès Camuzat,² Christiane Penet,² Valérie Mesnage,¹ Maria Martinez,³ Françoise Clerget-Darpoux,⁴ Alexis Brice,² and Thierry Frebourg¹

¹INSERM EPI 9906, Faculté de Médecine et de Pharmacie, Institut Fédératif de Recherches Multidisciplinaires sur les peptides, Rouen;

²INSERM U289 et Fédération de Neurologie, Hôpital de la Salpêtrière, ³INSERM U358, and ⁴INSERM U155, Château de Longchamp, Paris;

⁵CHU de Rennes, Hôpital Pontchaillou, Rennes; ⁶CHU de Toulouse, Hôpital Purpan, Toulouse; and ⁷CHU de St. Etienne, Hôpital Bellevue, St. Etienne, France

Kindreds with ADEOAD with *PSEN1* Mutations

FAMILY	No. of		AAO (range [years])	CODON CHANGE	AMINO ACID CHANGE	APOE GENOTYPE
	Affected Subjects	Generations				
ALZ 047	4	3	37–46	ACT→ATT	Thr147Ile	ε3/ε3



FDA Application for Individual Patient Non-Emergency Treatment (Compassionate Use)

- Treatment protocol approved by the Marshall University IRB on November 14, 2012
- FDA waived the 30-day review period; application submitted January 10, 2013, approved January 16, 2013



BRNI is IP-oriented

- But we still struggle with the patent process
- Specialized IP law firm helps
- Several patent families prosecuted
- Slows the grant application process
- Slows the collaboration process



Patents

- Alzheimer's disease diagnostics based on specific alteration of internally controlled Erk1/Erk2 phosphorylation ratio
- Methods to enhance cognitive ability, to treat cognitive decline, for neuroprotection and to enhance learning
- Methods for delivery of drugs across the Blood–Brain–Barrier
- Methods of treating depression



Sharing equipment and resources

- BRNI has a new EM with digital cameras
- 20 basic science researchers from Neurosciences now using the EM
- Pathology using the EM for clinical/diagnostic purposes. Previously, this diagnostic imaging was sent out of state.



In summary

- Years of research will soon pay off
- Research has shifted from “Plaques and tangles” to reconstructing memory
- Human clinical trial for therapeutics – imminent
- Biomarker skin test – continued testing in



Further conversation

Shana Kay Phares, CEO

sphares@brni.org

304.293.1361

Dr. Daniel Alkon, Scientific Director

dalkon@brni.org

304.293.3962

