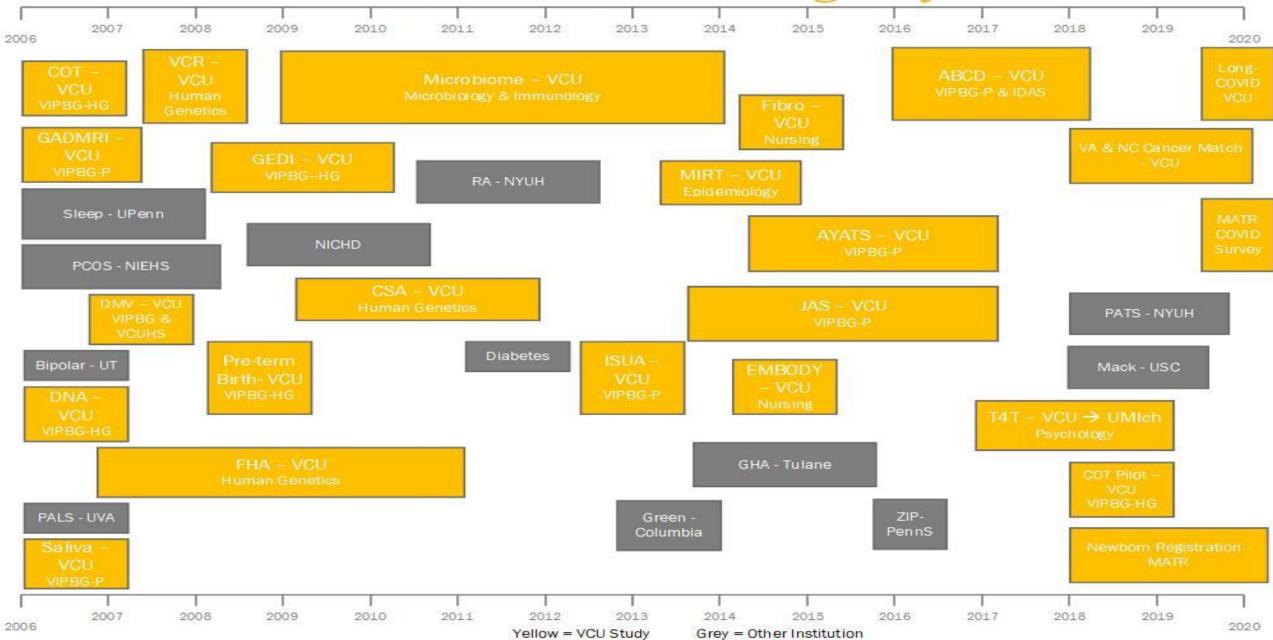


Overview

- 1) History of the MATR
- 2) Twin studies both internal and external to VCU
- 3) Characteristics of the registry
- 4) Why study twins?
- 5) Contribution of genes and environment to health outcomes
- 6) More complex mechanisms

MATR research services: Emily Lilley

کزر Mid-Atlantic Twin Registry



Target Population

Largest twin registry in the U.S.

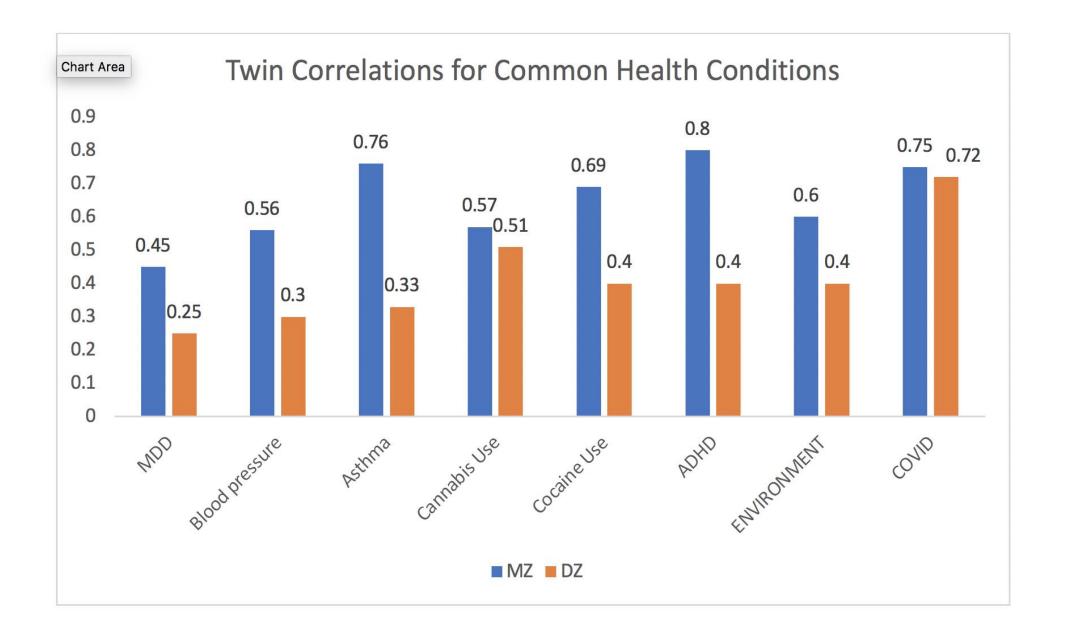
110,000 twins ascertained from birth records from North and South Carolina and Virginia's Department of vital statistics.

~38,000 registered twins.

~70,000 unregistered twins identified from birth records.

MATR Registered twins by Age and Race (N=38K)										
Age	18-25	26-35	36-45	46-55	56-65	66-75	76+	Total		
African American	911 16.1	1714 30.2	1348 23.8	669 11.8	646 11.4	316 5.6	69 1.2	5,673		
Asian American	58 35.1	64 38.8	39 23.6	4 2.4	0	0	0	165		
White (includes Hispanic)	5236 17.3	7981 26.4	6739 22.3	3899 12.9	3277 10.8	2323 7.7	796 2.6	30,251		
								37,470		

Zygosity (MZ or DZ) by Age												
	18-25	26-35	36-45	46-55	56-65	66-75	76+	Total				
MZ male	860 15.5	1310 23.7	1164 21,0	886 16.0	672 12.1	496 8.9	144 2.6	5,532				
DZ male	976 20.8	1472 31.4	742 15.8	538 11.5	460 9.8	350 7.48	142 3.0	4,538				
MZ female	1060	1680 22.4	1806 24.1	1272 16.9	932 12.4	602 8.1	132 1.76	7,490				
DZ female	1106 20.8	1508 28.4	956 18.0	692 13.0	614 11.6	364 6.8	72 1.36	5312				
DZ male-female	1777 17.6	2803 27.8	2034 20.1	1318 13.0	1154 11.4	710 7.0	302 2.9	10,098				
Unknown								2170				
								37,420				



More complex genetic mechanisms

- 1) Causes of covariation: Genes influencing more than one trait.
- 2) Innovation and attenuation of genetic effect: 'turning on' (and off) of genetic and environmental effect through development.
- 3) Cotwin Control Twin Design: Discordant MZ twins
- 4) Gene-environment interplay.

Future Directions

Use of multimodal approaches for recruiting twins into MATR studies (e-mail, phone, text).

Continued enrollment of unregistered twins on minority and rural populations.

Integration of twins with hospital related data into the MATR.

Sharing of knowledge about MATR resources to the scientific community.

MATR Research Services

- Data Collection: Online, Mail, Phone (CATI)– or Multimodal
- DNA Sampling for Genetic Studies
 - MATR Repository Access
 - Collection: blood, saliva, buccal (cheek swabs)
- Turnover Efforts: Permission to Release to Study Staff
 - Implemented for specialized protocols (MRI, site visits, involved sample collection)
- Archival Data Studies
 - Match MATR database against another database or pull from MATR health surveys
 - Create de-identified or anonymized dataset

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