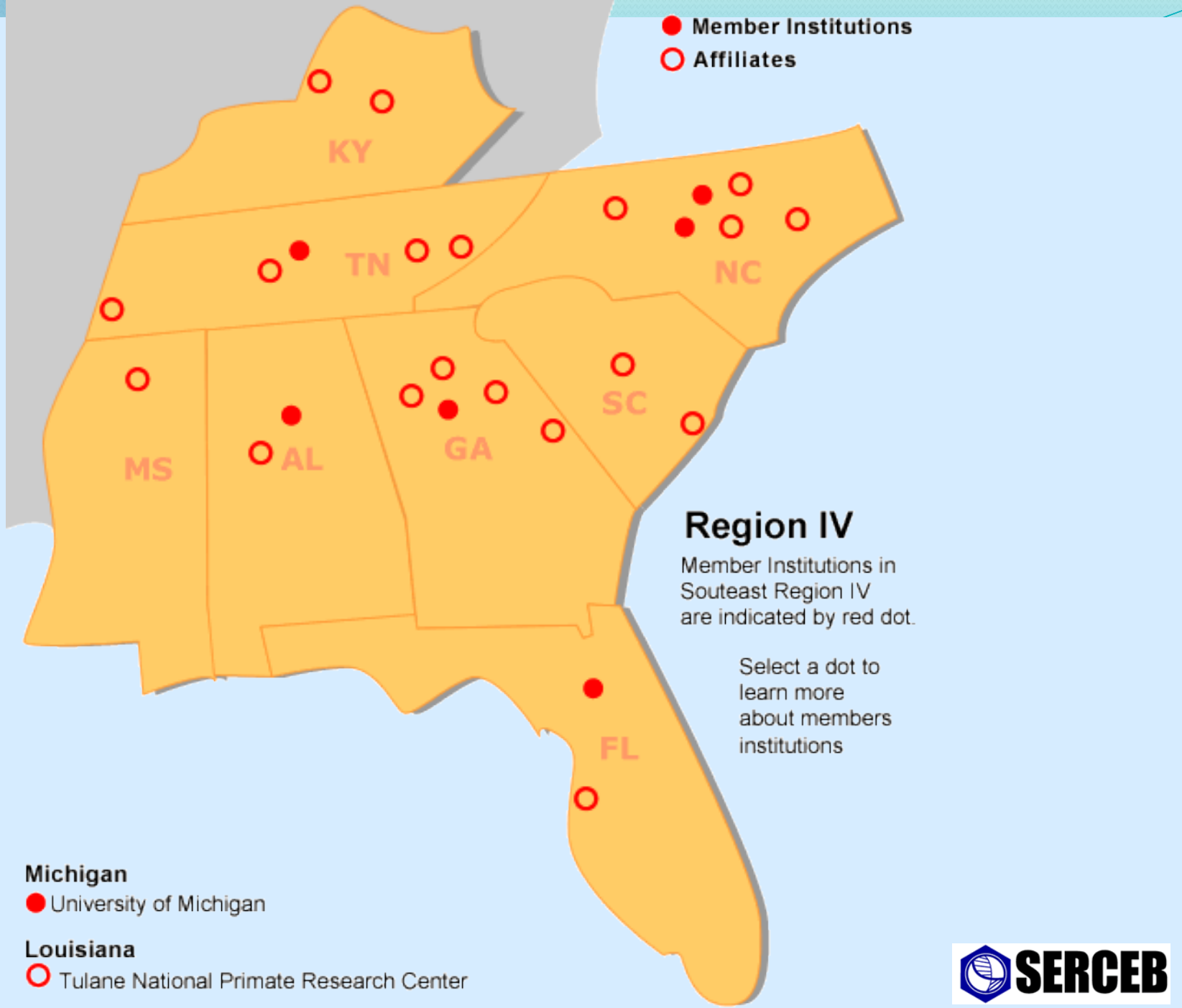
Member Institutions
Affiliates
KY
TN
NC
MS
AL
GA
SC
FL
Region IV
Member Institutions in Souteast Region IV are indicated by red dot.
Select a dot to learn more about members institutions
Michigan
University of Michigan
Louisiana
Tulane National Primate Research Center
SERCEB

SERCEB accomplishments

- Moved two drugs for pox viruses into phase 1 trials: HDP-cidofovir (CMX-001) (Chimerix) and ST-246 (Siga Tech). Showed synergy between them in animal models. Discovered a potent backup drug active against multiple DNA viruses from a drug screen and med chem (UAB/SRI).
- Nanoparticles as antigen and adjuvant delivery system (Emory, Ga Tech)
- Entirely human Mabs incl anti-1918 flu neutralizing Mabs (Vanderbilt)

SERCEB 2009-2014: projects

- 14 in toto, in 8 programs
- Principles of emergence of coronaviruses from zoonotic reservoirs. (Denison Vanderbilt and Baric UNC). Synthetic genomes, transgenic cell cultures, viral adhernce ligand/cell receptor interactions as a principal driver of emergence from bats, analysis of secondary mutations to increased fitness.
- Alphaviruses, esp chikungunya; animal models, mechanisms of disease (Heise UNC). Role of B reg cells in immune response (Tedder Duke)

The dengue problem in a nutshell

- 25 years of vaccine efforts-no banana
- Antibodies either protect (neutralize) or in secondary infections with different serotype, make it worse (Antibody mediated Disease Enhancement or ADE): DHF, especially in kids
- Is the problem due to different epitopes for neutralization vs ADE? Or different avidities/affinities? Or both?
- Must answer before pushing forward with new trials/vectors/antigens/adjuvants

An interactive synergistic dengue portfolio

- Dengue (and WNV) **What determines protection vs immune enhancement and hemorrhagic fever?**
- deSilva UNC, Baric UNC, Shresta LIAI, Crowe Vanderbilt, Pulendran Emory, Ting UNC, Scholle NC State. (Sri Lanka, Singapore, US travelers)
- Human viruses, sera and hMabs, emphasis on dengue serotype 3. Hi throughput neutralization vs ADE; epitope mapping; cDNA clones; mouse models; T cell mapping; crystal structures; multiple TLR ligands/nanoparticles for immunization; innate immune responses (NLR and TLR).
- Collaborate with White and Johnston (UNC) re VEE-VRP vaccines for human dengue, and others.

Cores and opportunities

- Career development grants, 100k per year for 2-3 years, and Developmental research projects 90-100 k per year for one and possibly two years (region)
- Biosafety, one week at Emory BSL-3/4 mock lab (region)
- Cores for small animals (mainly mice) infections in BSL-3 conditions, and imaging/flow/immune monitoring (Duke RBL)
- Mouse Mab core (UAB)
- Policy ethics and law core (Duke and region)
- Emergency preparedness program (Duke, SECEBT and region)