

Center for Stem Cell and Regenerative Medicine

Third Frontier Briefing

July 20, 2005

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The Center
for stem cell and regenerative medicine

Stem Cell Technologies in Ohio

- **World class expertise in all nonembryonic stem cells**
 - **Blood, brain, bone, cartilage, vascular, heart**
- **Coordinated programs in stem cells and tissue engineering R&D and clinical applications**
- **Two funded BRTTs**
 - **Center for Stem Cell and Regenerative Medicine [CSCRM]**
 - **Clinical Tissue Engineering Center [CTEC]**



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Stem Cells and Regenerative Medicine –

1. A **new paradigm of treatment** for many diseases – regenerate damaged tissues with cells rather than drugs or devices
2. We work on **adult-derived stem cells** (from bone marrow, umbilical cord blood, brain, muscle, not embryos)
3. Stem cell therapies are now in **clinical trials in Cleveland** and more are planned within 5 years (marrow failure, cancer, leukemia, heart, spinal cord injury, neurodegenerative diseases)
4. We have a unique collaboration between the **major biotechnology centers in Cleveland and Ohio:**
Case, Cleveland Clinic, University Hospitals of Cleveland, Athersys, Ohio State University, Cincinnati Childrens
5. The **National Center for Regenerative Medicine** [funded through a federal appropriation] has been established here, based on the CSCRM
6. Northeast Ohio has 4 new cell therapy or tissue engineering companies (Arteriocyte, Inc., RegenRx, Cell Targeting, Ohio BioGel) and the imminent opportunity to build a national **support industry for stem cells**



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First year Impact of the CSCRM/NCRM

- **Center grew:** 18 to 40 investigators, unparalleled cooperation among institutions, with increased research grant funding from \$9.5M to \$36.5M
- **Clinical trials:** six new therapies currently under study for cancer, cardiac and orthopedic repair with 3-4 additional within one year
- **New companies:** four new companies started
- **Attracting companies:** active collaborations with 5 biomedical companies and 4 companies outside Ohio may open Cleveland-based operations
- **New jobs:** 37 newly formed, high paying (@ \$60K/yr) jobs, 15 of 37 in “for profit” companies



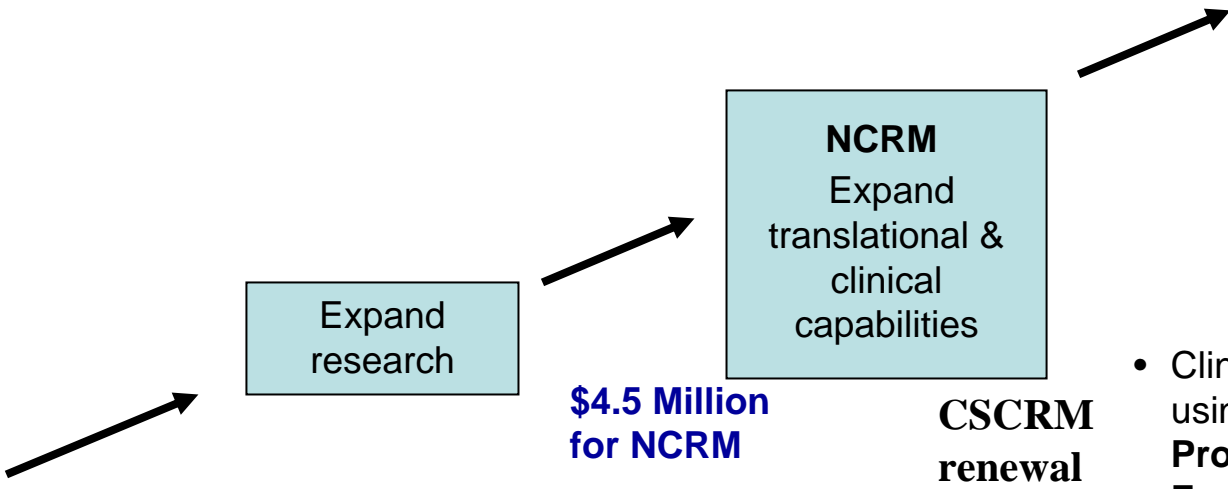
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2004	2005	2006	2007
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**\$19.4 Million
for 3yrs
State of Ohio**

**CSCRM
formed**



Disease focused
research groups

Cardio,cancer,
neuro, vascular

Research support

- Construction
- Commercialization

**\$4.5 Million
for NCRM**

Expand
research

NCRM
Expand
translational &
clinical
capabilities

**CSCRM
renewal**

Expand **funding** [to > \$40M] via

- NIH
- Nationally competitive grants
- SBIRs, STTRs

Recruitments -

- CCF - Dept of Stem Cell and Regenerative Medicine
- OES
- Neurosciences
- Cancer Center
- Athersys**

- Clinical trials using **Case Cell Production Facility**
- \$40M annual funding
- New companies:
 - Arteriocyte**
 - RegenRx,**
 - Cell Targeting,**
 - Ohio BioGel**



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Competitive Environment

- **Ohio - CSCRM:** \$19.4M state over 3 yr and
 - \$4.5M federal for the **NCRM**
- **California Institute of Regenerative Medicine:** \$300M/yr for 10 yr
- **Wisconsin Stem Cell Research Program:** state to invest >\$500M new facilities & research support
- **Harvard Stem Cell Institute:** \$5M + \$100M planned fund raising
- **Univ Minnesota Stem Cell Institute:** \$21.4M recent investment
- **Ansary Center for Stem Cell Therapeutics:** (Weill-Cornell Med. College) \$65M over 3 yr
- Other state funding initiatives: New Jersey, Illinois,



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