



Centers of Excellence

for
Mathematics and Science Education

Aims in Establishing Centers

The purpose of the **Ohio Board of Regents** and **partnering universities** in creating *Centers of Excellence* is to extend and deepen program excellence in mathematics and science teacher education and to expand capacity for the professional development of K-12 teachers.



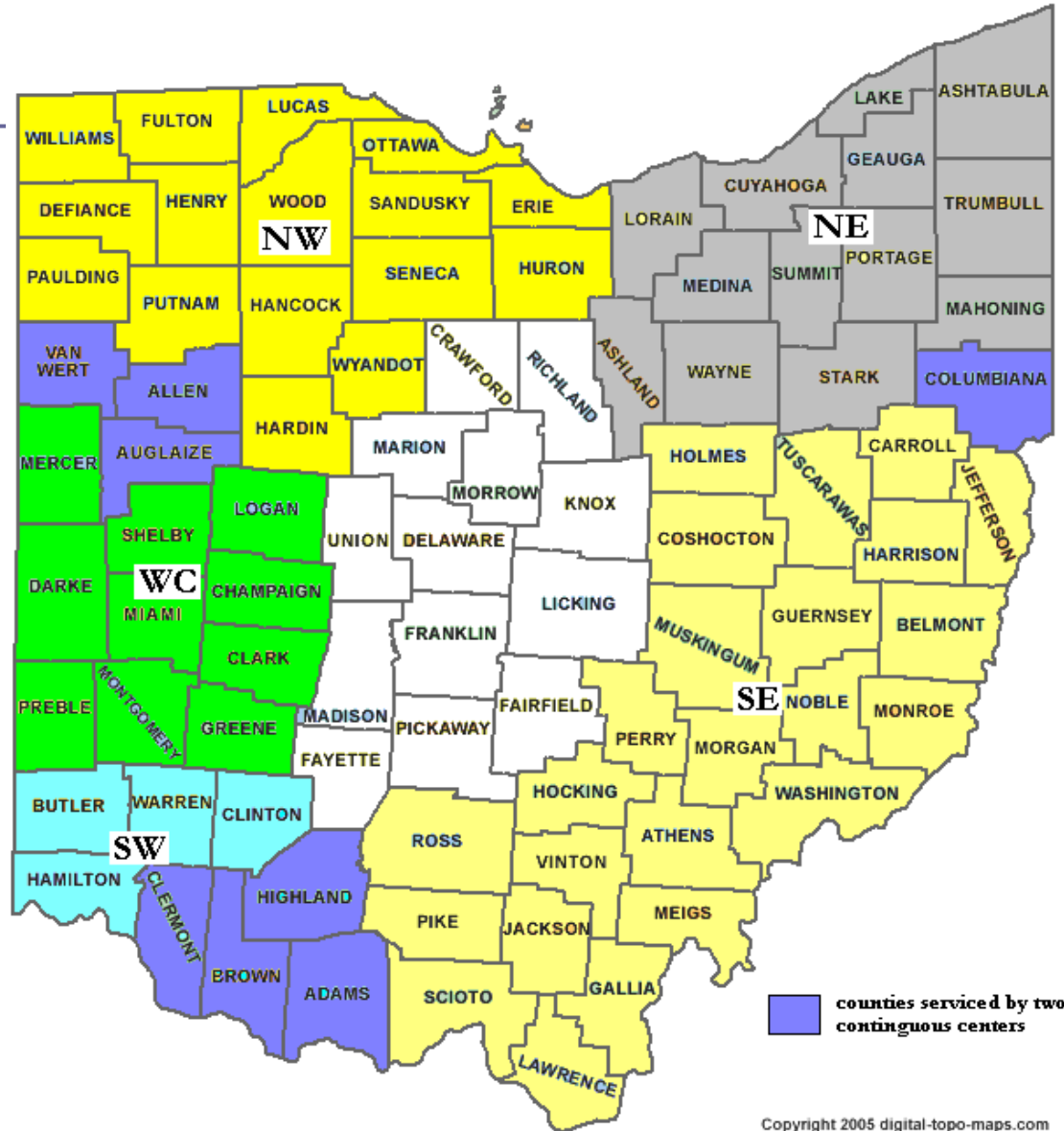
What Are Centers?

Centers are collaboratives of school districts, public and private universities and colleges, and two-year colleges to improve **teaching, learning, teacher education** and **research** statewide.

***An Example:* Southeast Center of Excellence Partners**

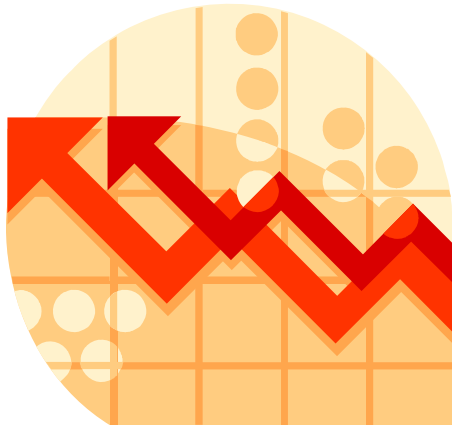
- Ohio University
- University of Rio Grande
- School districts of the Coalition of Rural and Appalachian Schools (CORAS)
- Rio Grande Community College
- Shawnee State University

Where are Centers?



Ohio Evaluation & Assessment Center*

- Technical assistance, support, and services in evaluation and assessment



- Increased participation of mathematicians and scientists in K-16+ evaluation and assessment activities, and use of such tools/instruments

- Explore graduate programs of study for preparing persons skilled in evaluation and assessment with a math and/or science focus

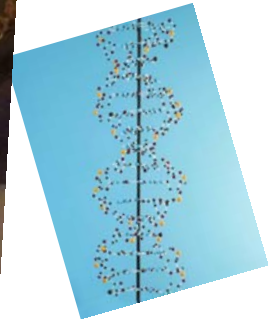
*The Ohio Evaluation & Assessment Center for Mathematics and Science Education is a special state-wide center whose services and activities are statewide rather than regional.

How Do Centers Benefit Education?

Centers are means for schools and universities to work together to:

- Share products of excellence and *best practices* for helping students learn more effectively and for educating prospective teachers better
- Find new and creative solutions for improving mathematics and science education
- Form partnerships for instituting programs and improved practices regionally and statewide.

What Does an Individual Center Look Like?



Regional Assessment

SEO-CEMS



- 29 of the poorest, most sparsely populated counties in Ohio
- 23 two- and four-year colleges & universities, community colleges, and branch campuses
- 127 school districts
- Handicaps: communication, travel, lack of school district resources, poor technology access, jobs



Five Goal Framework to Guide its Work

1. **systemic processes** – identify, summarize, and connect resources to region needs
2. **applied research** –address rural location, Appalachian culture, and math and science
3. **quality access** –increase opportunities for research-based PD and access to quality programs
4. **P-16 linkages** –strengthen links between teacher education programs and P-16 schools
5. **content/pedagogy** –bridges between standards-driven content & pedagogy in all education activities



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Example Activities

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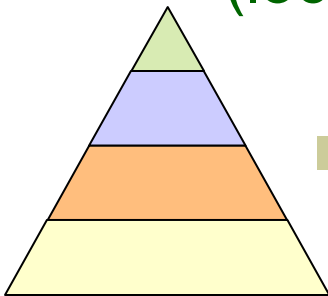
- Modified Lesson Study approach - collaborative study investigation (CSI) teams, research on problems of local school significance
- Technology mini-grants to faculty to enhance pre-service and in-service learning and engagement
- Consortium for Education in Science, Technology, Engineering and Math (CESTEM) on community outreach with 25 education, engineering, science, and mathematics faculty
- Grant application collaboration: MSP, Improving Teacher Quality, TeachOhio, Noyce

Example Activities

SEO-CEMS



- Partner with the Kentucky Science & Technology Corporation (KSTC), “Linking Pre-Service Preparation and In-Service Induction through Formative Assessment” (LPIFA).
- Database of math & science descriptors for Appalachian Ohio - a general information resource for schools and grant development
- Local Advisory Boards (LABs) with each IHE partner (local educators, business & community members, STEM and other faculty)
- Total \$1.05 million in grants in direct support or for affiliated projects





For more information:



- Northeast Center of Excellence (NEOCEx)
<http://www2.uakron.edu/cci/NEOCEx/>
- Northwest Center of Excellence (NWO)
www.nwocenter.org
- West Central Center of Excellence (WeEXCEL)
<http://www.wright.edu/excel/>
- Southwest Center of Excellence (Math, Science, & Kids!)
<http://excellentscimath.org>
- Southeast Center of Excellence (SEOCEMS)
<http://www.seocems.org/>
- Evaluation & Assessment Center for M/S Education
www.ohioeval.muohio.edu