

Virginia Tech's School of Education

Career and Technical Education

STEM Initiatives

December 4, 2006

Overview

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History

- 1970: College of Education established by T. Marshall Hahn
- 1973: Earned NCATE accreditation
- 1987: COE converts all teacher education degrees in core areas to the graduate level
- 1996: Merger of COE and CHR (CHRE)
- 2003: Merger of CHRE/CHSE and Liberal Arts programs from former CAS (CLAHS); Authorization from SCHEV for the School of Education (SOE)
- 2003: Continued accreditation granted by NCATE
- 2003: Began the transition of all teacher education programs to the graduate level
- July 1, 2005: Official start of the School of Education

Vision and Mission

- **Vision:** To become international leaders in P-12 STEM and Educational Leadership
- **Mission:** Virginia Tech's School of Education is dedicated to enriching the lives of P-12 children and youth, families, and communities through inquiry, leadership, and advocacy. We fulfill this mission with the preparation of educational professionals, applied research, and high impact outreach. Our mission clearly situates our work within the university's motto: **"Ut Prosim – That I may serve."**

Profile

- 23 programs
- 1,116 graduate students
- 72 full-time faculty
- 67 graduate assistantships
- 60+ personnel on grants/projects
- \$12.5 m in sponsored programs
- National leadership
- Accredited by the National Council for Accreditation of Teacher Education (NCATE)

Academic Programs

- Educational Psychology
- Educational Research
- Health Promotions
- Higher Education
- Instructional Technology
- Professional Education

Professional Education Programs

- Teacher Education
 - Reading Specialist
 - Counselor Education
 - General and Special Education Administration (P-12 administration and supervision; superintendents)
- >> Math Specialist pilot program

Initial Licensure/Teacher Ed Programs

- Agricultural Ed
- Elementary Ed (PK-6)
- Career & Tech Ed
 - Business & IT
 - Family and Cons. Science
 - Marketing Ed
- English
 - Journalism
 - Theatre Arts
- Foreign Language
 - Fr., Ger., Span., Latin
 - Eng as a Second Lang.
- History & Social Science
- Mathematics
 - Algebra I
 - Computer Science
- Music
 - Choral/vocal
 - Instrumental
- Science
 - Biology
 - Chemistry
 - Earth Science
 - Physics

2005-2006 Graduation Data

EDCO

M.A.	27
Ph.D.	2

EDRE

Ph.D.	2
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ELPS/EDSE

M.A.	46
Ed.S.	29
Ed.D.	12
Ph.D.	7

EDPE

M.S.	44
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EDCT

M.S.	39
Ph.D.	3

EDCI

M.A.	157
Ed.S.	3
Ed.D.	3
Ph.D.	9

TOTALS

MA/MS	311
Ed.S.	32
Ed.D.	15
Ph.D.	23

CTE/Tech Ed Program Completers

Program	2002-03	2003-04	2004-05	2005-06	2006-07 Projected
Ag Ed	13	28	12	12	18
BED	7	2	4	4	4
MKED	4	4	1	2	3
BED/ MKED	2	1	2	2	
FWS	2	2	3	2	3
TechEd	12	12	13	1	
VIED	1	1			

Current Enrollments: CTE/Tech Ed

- Career & Technical Education
 - MS: 125
 - EdS: 5
 - EdD: 4
 - PhD: 23
- Technology Education
 - MA: 26
 - PhD: 12

STEM Education (former Tech Ed)

- 5 core classes (pedagogy, foundations, research, trends/issues, seminar):
 - STEM Ed certificate
 - After pilot, will convert to e-learning
- Master's program: teacher-leaders
- Doctoral program: teacher educators in home discipline and interdisciplinary programs
- <http://TechEd.vt.edu/TE/STEM.html>

Research Activities (examples)

- Investigation of STEM Pedagogies at VT
- Examination of Mathematics curriculum materials
- Reasons for retention/attrition of African-American males in Engineering
- Academic success of students with AP/IB credit in Biological Sciences
- Self-efficacy study of young women in First Robotics

Outreach Activities (examples)

- Southside VA/IALR: trained over 200 teachers and administrators, integration of technology across the disciplines
- Community-based research through our Northern VA Center
- Biotechnology curriculum with VDOE
- Math-Science Partnership Grant with VCU

Cross-campus Projects

- STEM Graduate Education/Collaboratory
- VT STEM: university-wide
- Bridges Across Engineering Education at VT (BEEVT)
- First Robotics, partnership with Montgomery County Public Schools and Dept. of Mechanical Engineering
- Earth Sustainability Core Curriculum
- STEM-E doctoral program

Infrastructure Investments

- Hiring faculty with STEM expertise
 - 6 tenure-track
 - 2 clinical faculty
- Renovation of facilities
- Interdisciplinary STEM program – research collaboratory
- International projects: South Africa, Mexico, and China

Future Work

- Technology Education specialist endorsement
- Biotechnology curriculum
- STEM professional development institutes for P-12 teachers
- Art Museum of Western VA
- Phoebe's Field/NSF project
- Service Learning/VT STEM tutoring

For More Information...

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- SOE: <http://www.soe.vt.edu>
- VT STEM: <http://www.stem.vt.edu/>

Questions/Answers?
Conversation!