

AdvanceVT: **Institutional Transformation** **at** **Virginia Tech**

June 8, 2006



Overview

- Institutional context
- Change model
- *AdvanceVT* overview
- Data-driven change
- *AdvanceVT* elements
 - Strategies
 - Indicators of change
- Outcomes and NSF indicators
- Future Plans



Institutional Context: Virginia Tech

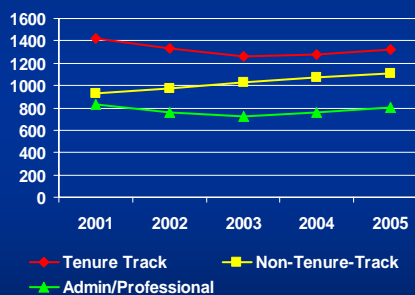
- Land grant institution
- Historically all male, military until mid-60s
- Eight academic colleges
- 60 bachelor's degree programs
- 120 master's and doctoral degree programs
- 26,000 students in Blacksburg; 28,000 total
- 25% of freshman class in engineering; 12% science
- More than 1000 B.S. engineering degrees awarded annually (8th in the U.S. in 2005 according to ASEE); nearly 500 master's & over 100 Ph.D.s in engineering



Institutional Context: Virginia Tech

- Restructuring of academic colleges
- New academic leaders
- Creation of Institute for Critical Technologies and Applied Science
- Impact of budget constraints on faculty hiring

Virginia Tech Faculty



2006-2012 Strategic Plan Update Institutionalizing *AdvanceVT* Initiatives

– Scholarship Domains

- Learning
 - Undergraduate Research
 - PhD Growth / Transformative Graduate Education
- Discovery
 - Energy, Materials, and Environment
 - Social and Individual Transformation
 - Health, Food, and Nutrition
 - Innovative Technologies and Complex Systems
- Engagement
 - Economic Vitality
 - International Education and Research
 - PK-12 Enhancements in STEM

– Selected Foundation Strategies

- Diversity
- Faculty Recruitment / Retention
- Work life Policies, Dual Career Office
- Faculty Leadership Development



Institutional Context: Virginia Tech

AdvanceVT initial focus on two colleges:

- **College of Engineering**
 - 302 Tenured/Tenure-track faculty, fall 2005
 - 39 Women (13%)
 - 4th highest # of women engineering faculty in U.S., according to ASEE
 - 1 Female Associate Dean (+1 at NSF)
- **College of Science**
 - 191 Tenured/tenure-track faculty, fall 2005
 - 30 Women (16%)
 - 2 Female Associate Deans



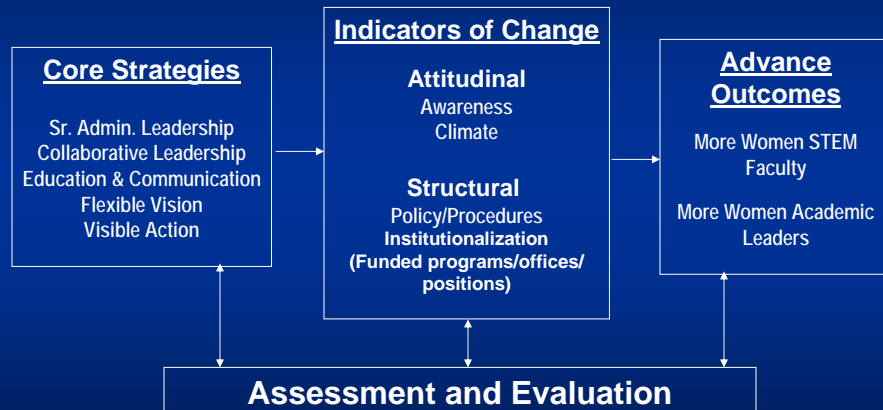
Typology of Change

		Depth	
		Low	High
Pervasiveness	Low	Adjustment (I)	Isolated Change (II)
	High	Far-reaching Change (III)	Transformational Change (IV)

Eckel, P.D., & Kezar, A. (2003). Taking the reins: Institutional transformation in higher education. Westport, CN: Praeger Publishers and the American Council on Education.



AdvanceVT Model for Transformative Change



Adapted from Eckel, P.D., & Kezar, A. (2003). Taking the reins: Institutional transformation in higher education. Westport, CN: Praeger Publishers and the American Council on Education.



Indicators of Lasting Change Advance Institutional Transformation Projects

- **Attitudinal Indicators:**
 - **Awareness**
 - Consciousness-raising
 - Change in discourse, framing of issues
 - **Change in climate**
- **Structural Indicators:**
 - **Change in specific procedures or policies**
 - **Creation of institutionally-funded program/office/position**

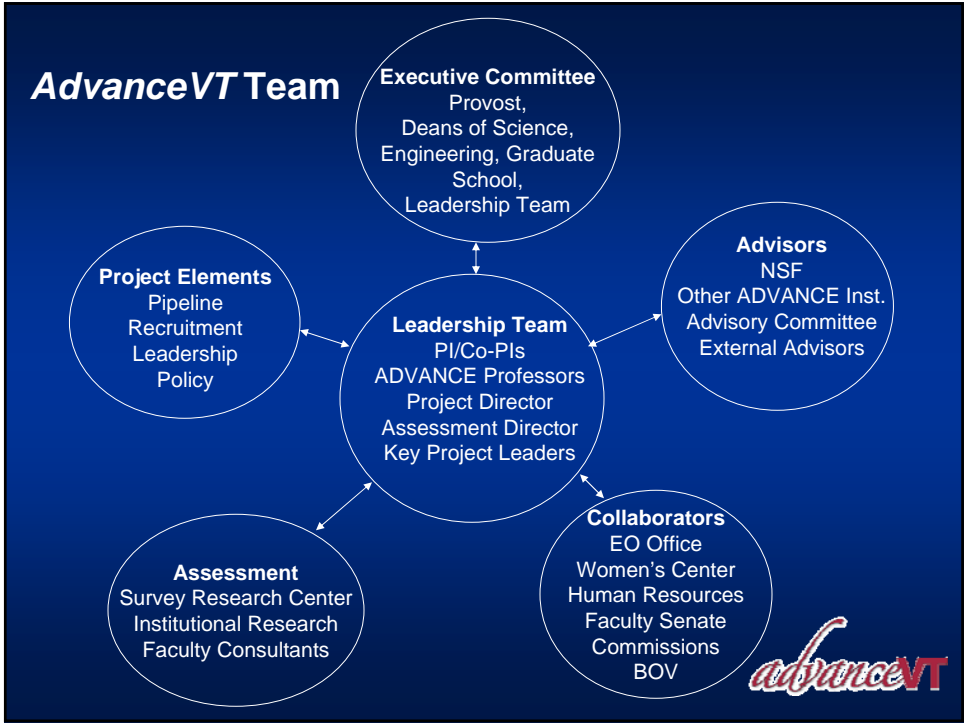
Malley, J. & Creamer, E., Creating changes that last: Institutionalizing ADVANCE transformations. Presentation to Advance PI Conference, May 2006.



AdvanceVT Overview

- Organizational structure
- University-wide initiatives
- Data driven institutional change
- Project elements
- NSF Indicators
- Future Plans





Building University-wide Awareness and Involvement

- Annual University-wide workshop
 - First workshop identified child care and dual career hiring as priority issues
 - Speakers from NSF and other ADVANCE institutions featured at first and second workshops
 - Third workshop held in conjunction with the Mid-Atlantic Conference on the Scholarship of Diversity



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Building University-wide Awareness and Involvement

- Increasing connections and visibility among women
 - Networking receptions
 - Visiting speakers
 - Award nominations
- Creating a climate for change
 - Department head development
 - Research and assessment
 - University-wide survey
 - Visible leadership from deans and provost



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AdvanceVT focuses on four elements

- Pipeline: Advancing women into faculty careers
- Recruitment: Increasing representation of women and establishing a critical mass



- Leadership: Empowering women as leaders and scholars
- Policy: Institutionalizing change through policy

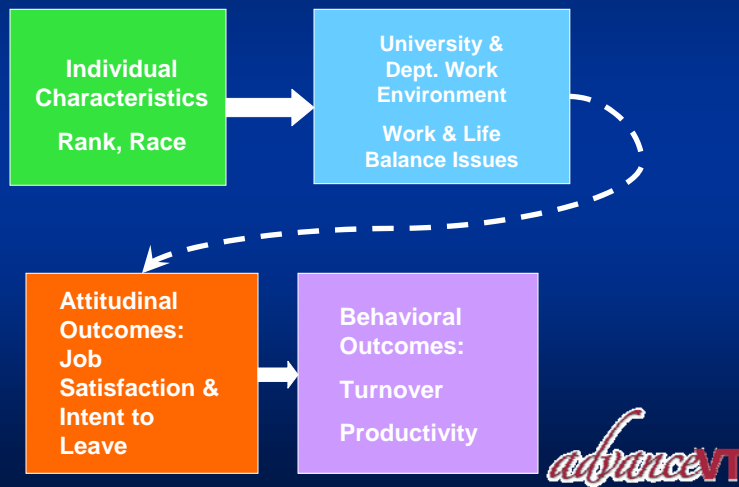


Data-driven institutional change

- Key Strategies
 - Use data to promote change through the activities of each of the four work elements and climate change in general
 - Multiple data sources
 - Surveys
 - Interviews
 - Focus groups
- Create awareness of need (raise consciousness)
- Change climate at the departmental level
- Implement structural change through policy and procedure changes
- Institutionalize to promote long-term change

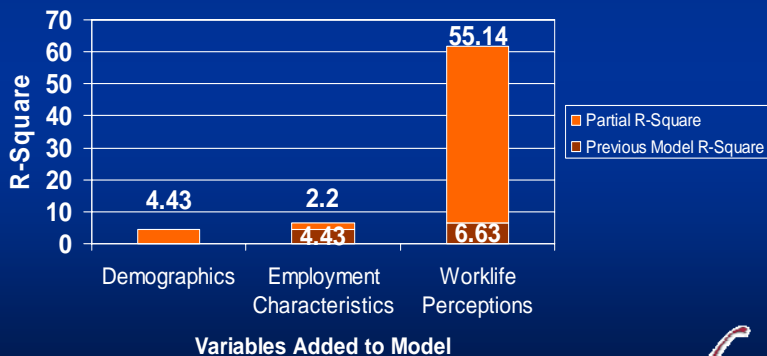


Faculty Survey Model Results Support the Role of Climate



Faculty Survey Model Results Factors that Influence Job Satisfaction

Hierarchical Regression Model for Job Satisfaction



Key Findings from the 2005 Faculty Focus Groups

- Resource constraints
- Unclear direction from administration
- Lack of recognition, rewards, compensation
- All time is university time
- Lack of diversity and collegiality
- Lack of flexibility in tenure and promotion
- Lack of mentoring
- Consequences for family life and personal health

"Work becomes the faculty member's life...they neglect family. It is an individual choice...but the university creates a culture that encourages this behavior by not allowing time for anything else if you want to be successful."

The logo for advanceVT, featuring the word "advance" in a red, cursive font and "VT" in a bold, red, sans-serif font.

Data Supporting the Policy Element: Example

Work-Life Issues Appeared as a Key Finding in Numerous Data Collection Efforts

Data sources:

- Cohort 2001 New Hire Interviews
- Spring 2005 Faculty Focus Groups
- 2002-2004 Exit Survey
- 2005 Faculty Work-Life Survey
- Child Care Needs Assessment Survey

The logo for advanceVT, featuring the word "advance" in a red, cursive font and "VT" in a bold, red, sans-serif font.

Data Supporting the Pipeline Element: Example

Activity

Group interview with S & E graduate students during spring 2005.

Key finding

Work-life issues, particularly a lack of consideration of family responsibilities was the top concern raised by College of Engineering students.

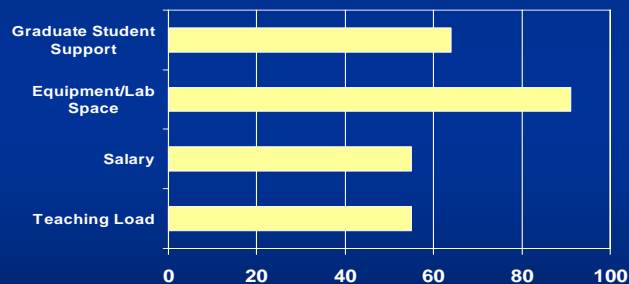
Outcome

New work-life grants provide money to cover graduate students on paid leave due to childbirth or family emergencies.



Data Supporting the Recruiting Element: Example

Important Components of Startup Package

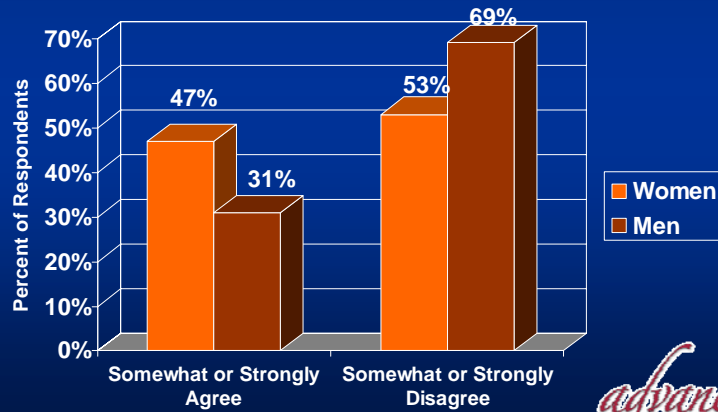


Support for their research was important to the majority of new faculty, including graduate student support (64%) and funding for equipment and lab space (91%).



Data Supporting the Leadership Element: Example

I aspire to a leadership position at Virginia Tech beyond my current position (e.g. department chair, center director, dean, etc.)



AdvanceVT focuses on four elements

- Pipeline: Advancing women into faculty careers
- Recruitment: Increasing representation of women and establishing a critical mass



- Leadership: Empowering women as leaders and scholars
- Policy: Institutionalizing change through policy



Pipeline Element: Advance women into faculty careers

Mission Statement

Increase the number of women electing to pursue academic careers through empowerment and skill building programs.



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Pipeline Element: Strategies

- **Senior Administrative Leadership**
 - VPs for Research & Graduate Studies
- **Collaborative Leadership**
 - Advance Professors
 - Graduate Student Association
 - UMBC
 - Faculty mentors
- **Education & Communication**
 - Seminars & workshops
 - Mock interviews
 - National conference
- **Flexible vision**
 - Focus groups set priorities
 - Post-doc fellowship revised
 - Research faculty focus
 - Links to faculty recruitment
- **Visible action**
 - Work-life grants
 - Transformative Graduate Education
 - Graduate Life Center
 - Invested university, college, & department resources

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Pipeline Element: Indicators of Change

Attitudinal

- **Awareness & Climate**

- Increased interest in faculty careers among graduate students
- Increased engagement in professional development & networking
- Increased university attention to graduate student and post-doc issues

"I believe that AdvanceVT has strengthened my desire to pursue an academic career and allowed me to see it as a more reachable goal. Thank you."

- 2005 Graduate Student Seminar Participant



Pipeline Element: Indicators of Change



Structural

- **Policy/procedures**
 - Work-life grants
 - Networking events
- **Institutionalization**
 - Graduate life center
 - Graduate Education Development Institute



Recruitment and Retention Element: Increase the representation of women

Mission Statement

Increase and sustain the representation of women at all ranks in the Colleges of Science and Engineering.



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Recruitment & Retention Element: Strategies

- **Senior Administrative Leadership**
 - Deans & Department Heads
- **Collaborative Leadership**
 - Advance Professors
 - Search committees
- **Education & Communication**
 - Best practices presentations
 - Use of data
- **Flexible vision**
 - Cluster hiring
 - Pro-active recruitment
- **Visible action**
 - Change in recruitment advertising
 - Web info for prospective faculty
 - Bias brochure
 - Dual career assistance
 - Investment of university, college, & department resources

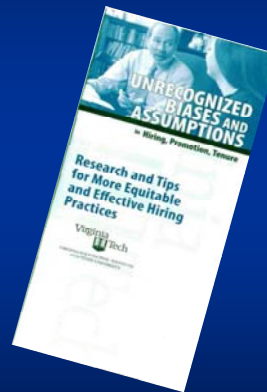
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Recruitment & Retention Element: Indicators of Change

Attitudinal

- **Awareness & Climate**

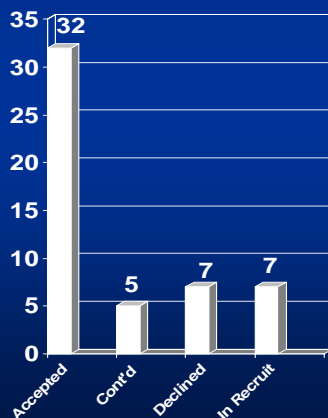
- Interpretation of reference letters
- Openness to dual career hires
- Widening faculty searches
- Pre-emptive retention actions
- Early identification of potential candidates



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Recruitment & Retention Element: Indicators of Change

Dual Career Hires
2005-2006



Structural

- **Policy/procedures**

- Cluster hiring
- Certification of candidate pools
- Target of opportunity hiring

- **Institutionalization**

- Dean/Associate dean positions to oversee hiring/diversity

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Leadership Element: Empower women as leaders and scholars in science & engineering

Mission Statement

Increase the number of women in administrative and technical leadership positions in the Colleges of Engineering and Science.



Leadership Element: Strategies

- **Senior Administrative Leadership**
 - VPs, Deans & Department Heads
- **Collaborative Leadership**
 - Advance professors
 - Faculty mentors
 - Work group participants
- **Education & Communication**
 - Individual meetings with department heads
 - Department head roundtable
- **Flexible vision**
 - Revised approach in year two
 - Skill development workshops
 - Expanded beyond colleges of science and engineering
- **Visible action**
 - Visiting scholars
 - Research seed grants
 - Leadership fellowships
 - Matching funds from colleges & departments



Leadership Element: Indicators of Change

Attitudinal

- **Awareness & Climate**

- More women aspire to leadership roles
- Increased interest in developing leadership skills
- Succession planning
- Increased understanding of grant solicitation process

"The [AdvanceVT leadership development] program has prepared me to pursue positions and I have started to look. I feel like I am coming from a place of strength in pursuing a leadership position."

- 2005-06 Leadership Development Program Participant



Leadership Element: Indicators of Change



Structural

- **Policy/procedures**

- Expanded part-time leadership opportunities at college & university level

- **Institutionalization**

- University leadership development program



Policy Element: Changing the way we do business

Mission Statement

Promote policy change to remove barriers to success, and nurture the development of every faculty member to their fullest potential.



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Policy Element: Strategies

- **Senior Administrative Leadership**
 - BOV, President, Provost, VPs, Deans & Department Heads
- **Collaborative Leadership**
 - Associate Provost
 - Human Resources
 - Faculty Senate
 - Commission on Faculty Affairs
 - Work group members
 - Sloan, ACE
- **Education & Communication**
 - New department head orientation
 - College & university presentations
- **Flexible vision**
 - Faculty focus groups
 - Adapting external models
- **Visible action**
 - New and revised university policies
 - Brochures and web sites
 - Reports on child care, use of stop-the-clock policy, exit survey
 - Investment of university resources

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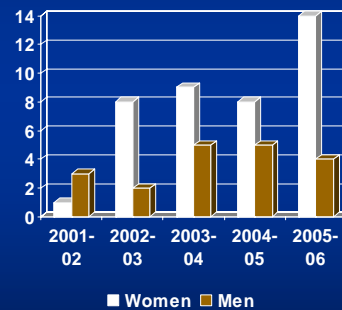
Policy Element: Indicators of Change

Attitudinal

- **Awareness & Climate**

- Pro-active engagement by department heads in stop-the-clock and dual career situations
- Increased requests for stop-the-clock & dual career assistance
- Increased cross-college collaboration on dual career hiring
- Men more open to Advance issues
- Belief that the university is committed to work-life issues

Stop-the-clock actions



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Policy Element: Indicators of Change



Structural

- **Policy/procedures**

- Dual career hire guidelines
- Stop-the-clock policy revision
- Modified duties policy
- Directive on external letter requests for P&T

- **Institutionalization**

- Dual career assistance office
- Dedicated funding for initiatives
- Day care

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Outcomes to Date: How to Measure Progress?

- **NSF Outcome Indicators:**
 - Faculty by appointment type, rank, and gender
 - Tenure and promotion outcomes by gender
 - Years in rank by gender
 - Time at institution by gender
 - Number and % women in leadership positions
 - Women holding professorships and chairs
 - Composition of promotion and tenure committees
 - Salaries
 - Space allocation
 - Start up packages

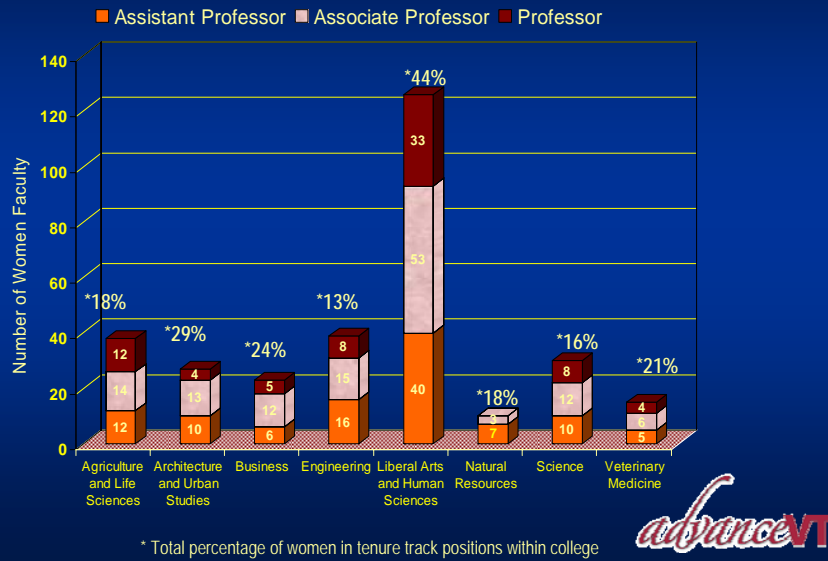


New Directions: Next Two Years

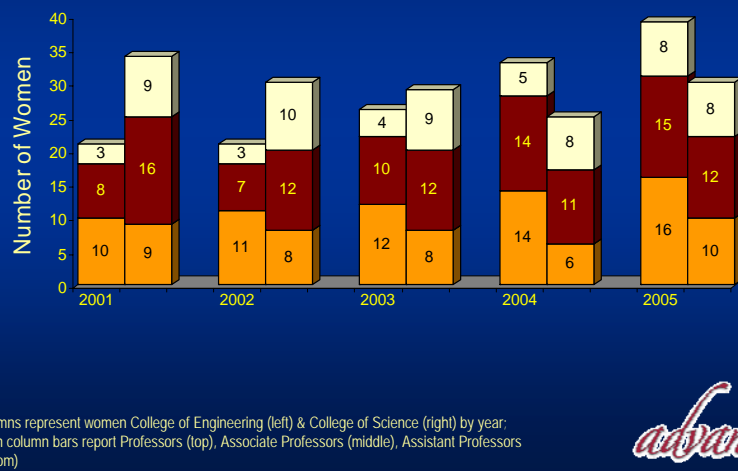
- **Department Climate**
 - Core values
 - Mentoring
 - Collaboration & networking opportunities
 - COACHE survey of untenured faculty
- **Diversity**
 - Women of color
- **Research Faculty & Post-docs**
- **Follow-up survey**
- **Expanded participation on leadership team**



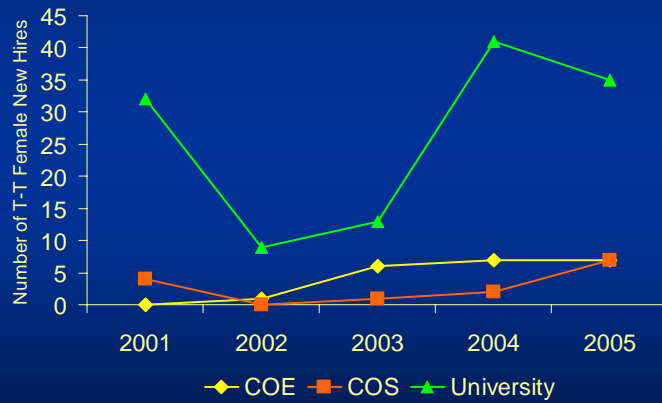
Women Faculty at Virginia Tech by College, Fall 2005



Tenured and Tenure Track Women Faculty at Virginia Tech: College of Engineering and College of Science

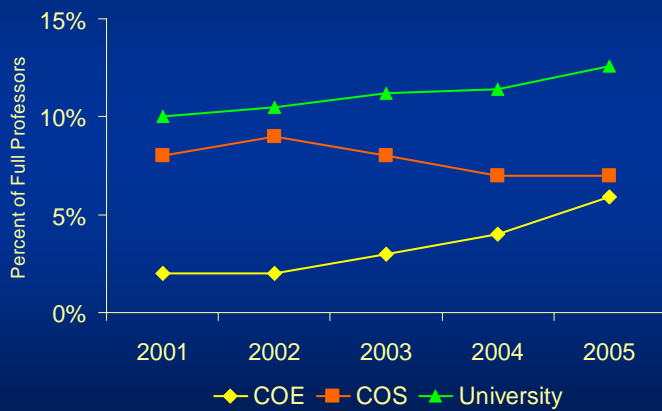


New Full-Time, Tenure-Track Women Faculty at Virginia Tech



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Women Full Professors at Virginia Tech



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Virginia Tech Distinguished Professorships & Chairs, June 2006

	Endowed Professorships		Distinguished Professorships	
	M	W	M	W
Agriculture & Life Sciences	7	0	2	0
Architecture & Urban Studies	6	0	1	0
Business	23	0	0	0
Engineering	42	1	5	0
Liberal Arts & Human Sciences	3	2	3	4
Natural Resources	6	0	1	0
Science	6	1	8	0
Vet Med	7	0	0	0
University Total	100	4 (3.8%)	20	4 (16.6%)

Faculty who hold both an Endowed Professorship and an ADP/UDP Professorship are included within the Distinguished Professorships count only



Virginia Tech Department Heads June 2006

<i>Academic Colleges</i>	Department Heads	
	Men	Women
Agriculture & Life Sciences	9	2
Architecture & Urban Studies	4	0
Business	6	0
Engineering	11	0
Liberal Arts & Human Sciences	12	6
Natural Resources	4	0
Science	8	0
Veterinary Medicine	2	1
Total Academic Colleges	56	9 (13.8%)



Virginia Tech College and University Administrators, June 2006

- **3 Female Vice-Presidents/Vice-Provosts**
 - Development, Student Affairs, Graduate School
- **2 Female University Center Directors**
- **1 Female Academic Dean**
 - Agriculture
- **6 Female Associate Deans**
 - 2 in College of Science
 - 1 in College of Engineering
 - +1 at NSF
 - 1 in College of Business
 - 2 in College of Liberal Arts & Human Sciences



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Women Faculty at Virginia Tech: Ready to ADVANCE!

