

***New Academic Program Proposal for the Ph.D. in
Integrative Biology***

Presentation to Academic & Student Affairs Committee
Board of Trustees

March 12, 2026



Need for a Ph.D. Program in Integrative Biology

- Upper Cumberland, as a hub of biodiversity, offers unique and tremendous research opportunities for biological sciences
- Research questions and problems, in most cases, are too complex to be tackled by master's or undergraduate students
- Workforce preparation for Tennessee's fastest-growing employment sector (11-36% projected growth) in biological data scientists and biotechnology
- Tennessee Tech currently has six doctoral programs, but none are in biological sciences
- This Ph.D. program is unique in the state, taking a systems approach across molecular, cellular, organismal, population and evolutionary biology—creating opportunities for interdisciplinary collaborations



Enrollment and Revenue Projections

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Enrollment	12	17	22	25	28	30	30
Graduates	0	0	0	2	5	7	8

Instructional Cost & Revenue Projections

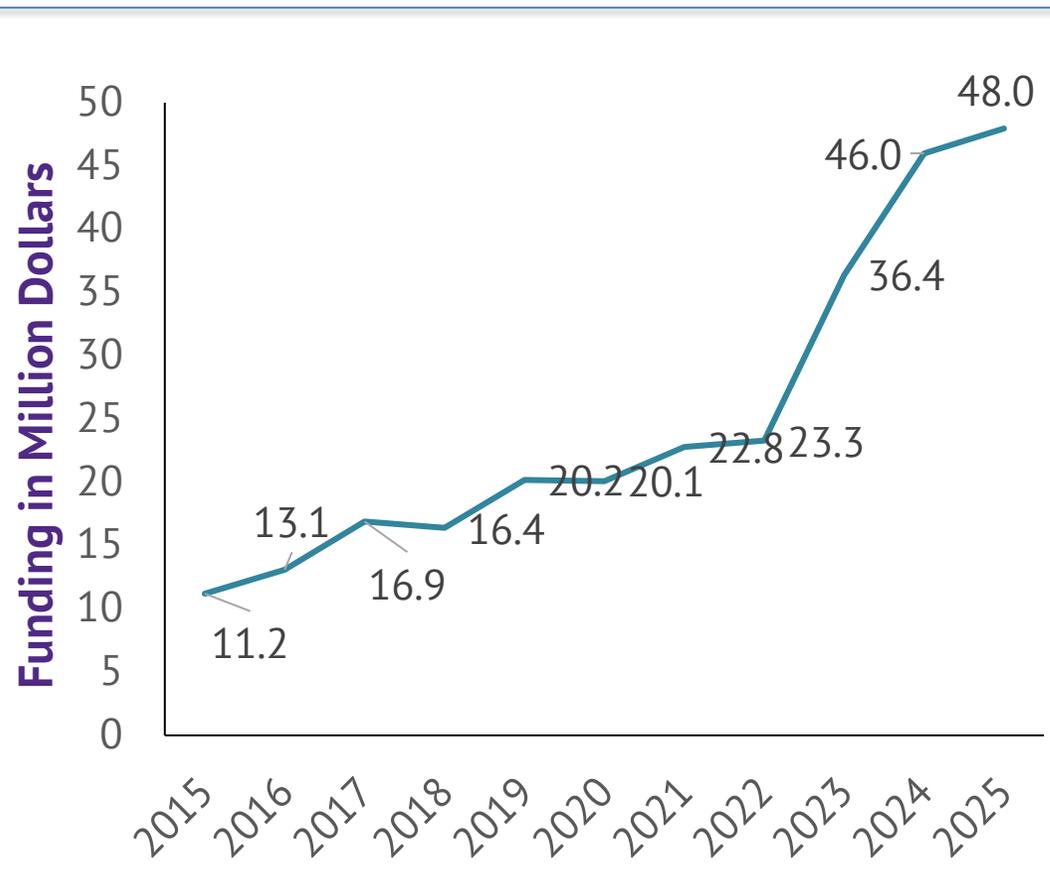
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Expenses	\$747,540	\$769,906	\$792,943	\$816,672	\$841,112	\$866,285	\$892,214
Revenues	\$208,770	\$334,288	\$467,150	\$1,033,242	\$1,433,088	\$1,743,997	\$1,949,010

- Steady state enrollment of 30 students
- New hires: One tenure-track faculty + one lecturer; 50% admin assistant
- Ten Graduate Teaching Assistant stipends; revenues exceed costs by Year 4



Enhancing the Research Mission

- The major workforce for research in the country is Ph.D. students
- Research at Tennessee Tech has grown significantly in recent years
- Ph.D. education has been growing at Tennessee Tech, but not at the same pace as research
- This would be the only Ph.D. program in the College of Arts and Sciences



Strengthening Research through Increased Ph.D. Enrollment

Average percentage of Ph.D. students at R1 universities	6%
Percentage of Ph.D. students at Tennessee Tech	2.5%
Minimum number of doctoral degrees/year required of R1	70
Minimum research expenditure required for R1 university	\$50M
Current research expenditure of Tennessee Tech	\$40.2M
Estimated number of Ph.D. students, to allow 70 doctoral degrees/year (~5.5 years on average)	385
Current doctoral students at Tennessee Tech	272
Minimum growth needed	113



Return on Investment with Ph.D. Education

- Allows Tennessee Tech to further grow the research enterprise
- Produces scholarship and research output, supporting economic development in the region and state, and enhancing the reputation and rankings of the university, e.g., becoming an R1 research university
- Helps Tennessee Tech to recruit top talents, both students and faculty
- Enhances student experience and success through research. Provides workforce for hands-on, experiential learning opportunities for undergraduate students



