Modernizing Universities in Europe

by Francisco Veloso

Fostering competitive research and
learning environments to attract and
train highly qualified human resources

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# Fostering the Competitiveness of European Universities – An Agenda

- Promote Mobility

- Reward Excellence

- Keep Innovating

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Elements of a global market for talent
Example: Top 25 US Universities in Mid-Atlantic

- **Roughly 20,000 regular faculty (9-10 month contract)**

- **Hired close to 3000 faculty from 2004 to 2006**
    - Almost 5% of total faculty per year
    - Meaning in 10 years close to 50% of total faculty

- **Foreign nationals account for 20% of total hires**

- **Dynamic hiring of tenured professors**
    - Over 450 faculty hired with tenure from 2004 to 2006
    - Represents 1% of tenured faculty per year

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Academic inbreeding is rampant in European schools, especially in the South

Share of Assistant Professors hired from own institution after PhD
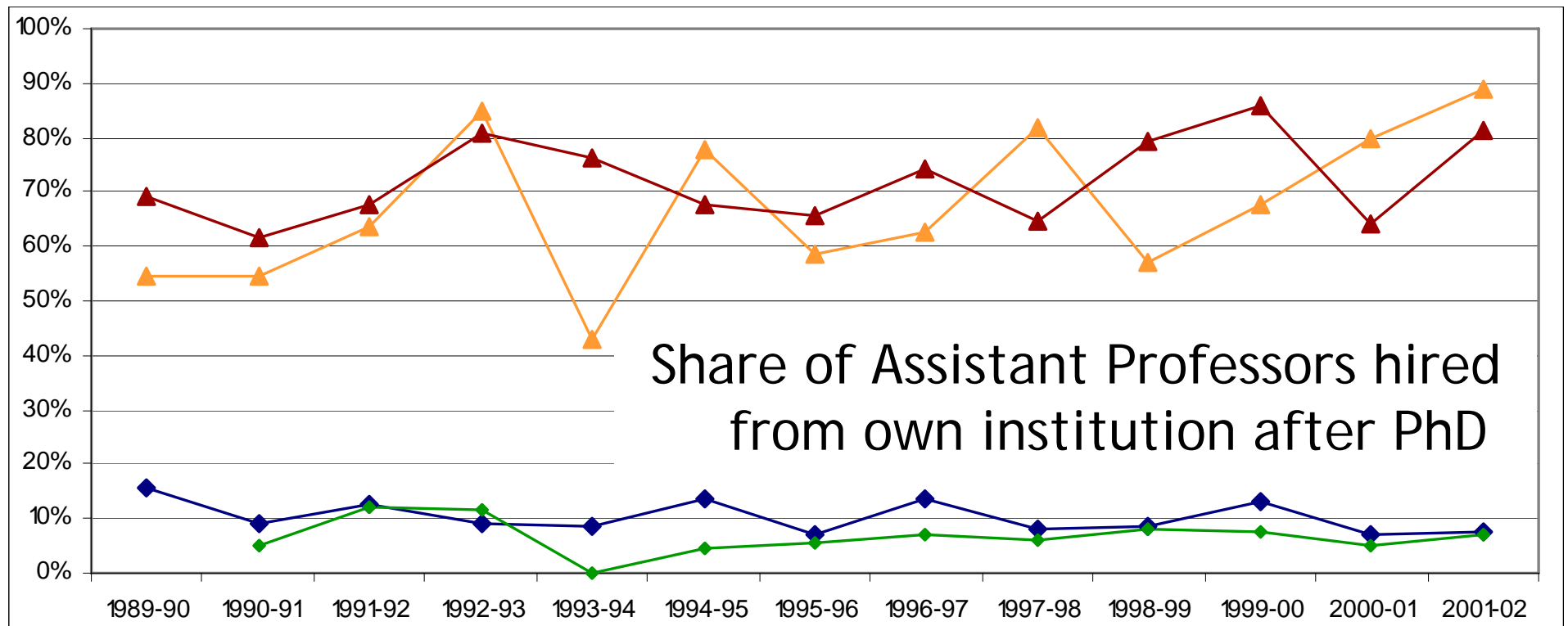
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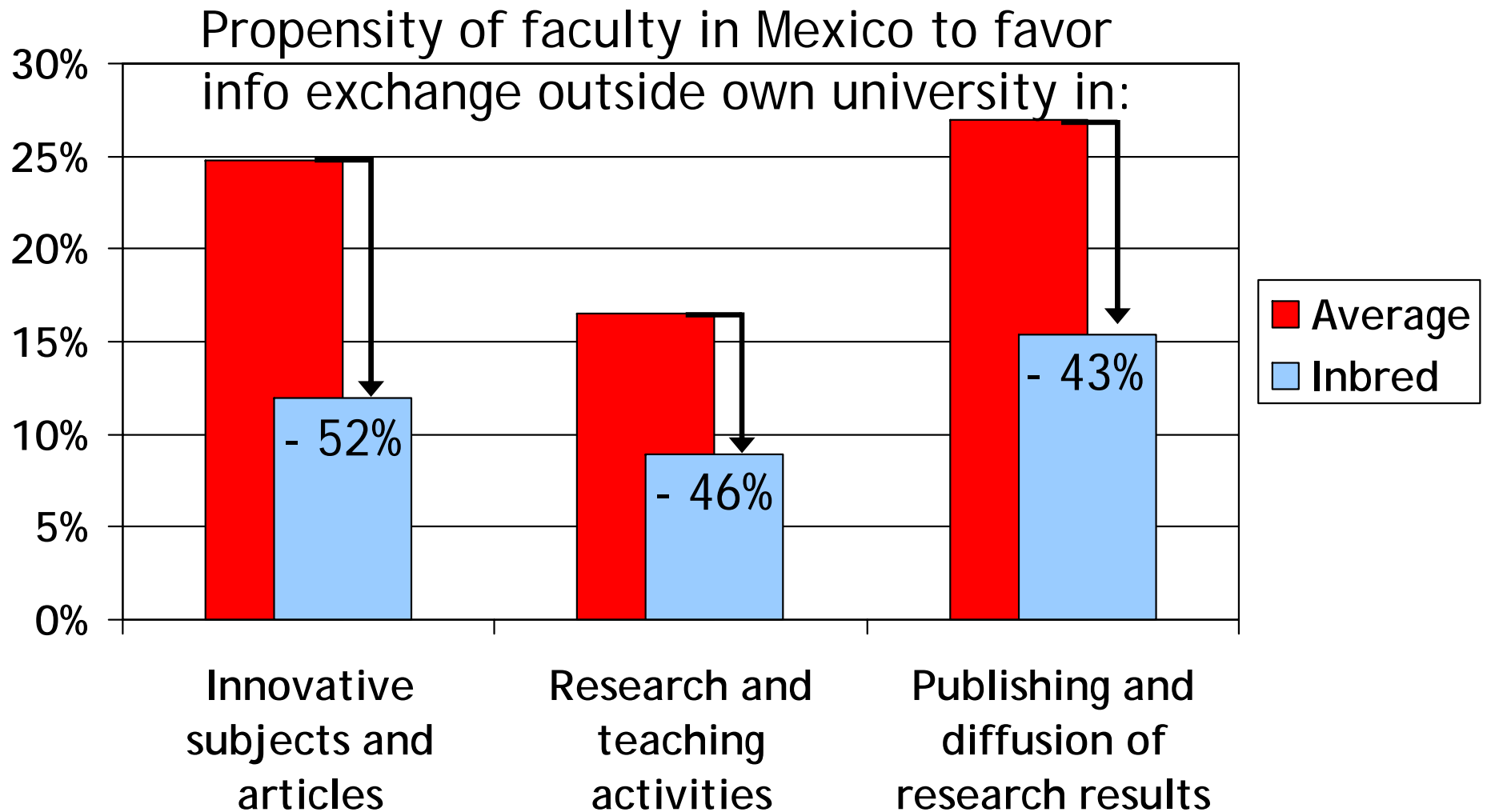- University of Wisconsin Madison - USA
- University of Texas at Austin - USA
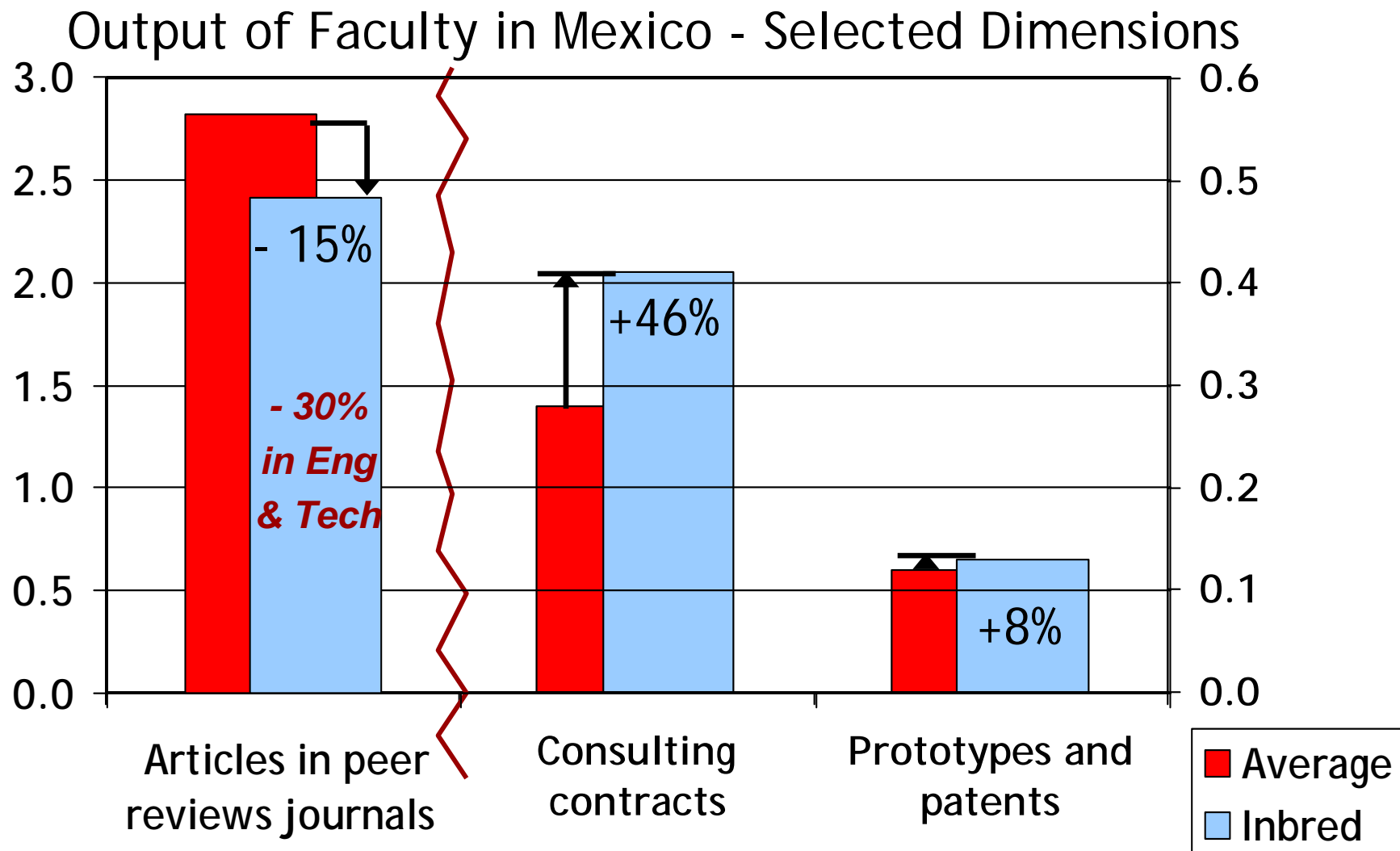- University of Porto - Portugal
- Technical University of Lisbon- Portugal

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Inbreeding also high in many other regions

Country	Academic Inbreeding rate
United States	Overall Very low Some exceptions (e.g.): Harvard Law School is 81%; Yale Law School is 73%
United Kingdom	17%
France	50%
Portugal	80%
Spain	95%
Japan	Low overall: 34% High on national universities
Russia; Mexico; Korea; China; Singapore; Sweden	High inbreeding rates

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Inbreds less engaged in external research contacts, risking knowledge obsolescence

Propensity of faculty in Mexico to favor info exchange outside own university in:

- Innovative subjects and articles: - 52%
- Research and teaching activities: - 46%
- Publishing and diffusion of research results: - 43%

Legend: Average (red), Inbred (light blue)

Probit regression controlling for gender, experience, teaching load, research funds, scientific field and university Source: Horta Veloso Grediaga, 2007

Inbreds have less scientific productivity, substituting with external engagement...

Output of Faculty in Mexico - Selected Dimensions

- 15%

- 30% in Eng & Tech

+46%

+8%

Articles in peer reviews journals

Consulting contracts

Prototypes and patents

- Average
- Inbred

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EU University salaries lower than US

UK Universities (2005/6)	Annual	US Mid-Atlantic Univ. (2006)	9/10 month
London School of Economics	86,312	University of Pennsylvania	129,633
City University	80,422	Princeton University	127,018
London Sc. Hyg. & Trop. Med.	78,826	Columbia University	112,879
The Open University	78,672	Cornell University	108,186
University of the Arts, London	77,158	CUNY Grad Sch. & Univ. Center	107,152
Imperial College	76,886	New York University	105,486
King's College London	76,510	Carnegie Mellon University	101,233
Cranfield University	76,433	George Washington University	98,433
The University of Aberdeen	76,297	Georgetown University	98,237
University College London	76,171	Johns Hopkins University	95,320
The University of Leicester	75,868	Rutgers University	94,496
Edinburgh College of Art	75,554	University of Rochester	92,833
Royal Holloway and Bedford	75,343	Rensselaer Polytechnic Institute	92,476
The University of Liverpool	75,292	Lehigh University	92,430
The University of Keele	75,044	Stony Brook University	89,653
The University of Newcastle	74,719	Univ. of Maryland-College Park	89,253
The University of Hull	74,534	SUNY at Buffalo	87,728
The University of Glasgow	74,418	University of Delaware	85,856
The University of Essex	74,345	Temple University	84,944
The University of East London	74,226	Pennsylvania State Univ. (Main)	83,975
Cardiff University	74,134	SUNY at Albany	82,186
The University of Leeds	74,009	Syracuse University	81,824
The Royal Veterinary College	73,752	Univ. of Pittsburgh (Main)	81,473
Aston University	73,620	SUNY at Binghamton	79,899

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And much more homogeneous

85%

60%

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Exchange Rate: 0.545; Sources: University and College Union, 2007 (UK)
National Center for Education Statistics, 2007 (US)

US funding mostly from private sources!
University of Michigan Budget Sources

Year 2005-2006; Excludes Health System; Total of $2.3Billion

Legend:
- State Appropriations
- Student Tuition & Fees
- Federal Government Sponsored Programs
- Non-Federal Government Sponsored Programs
- Private Gifts & Sponsored Programs
- Endowment and Other Invested Funds
- Other Income from Investments
- Departmental Activities

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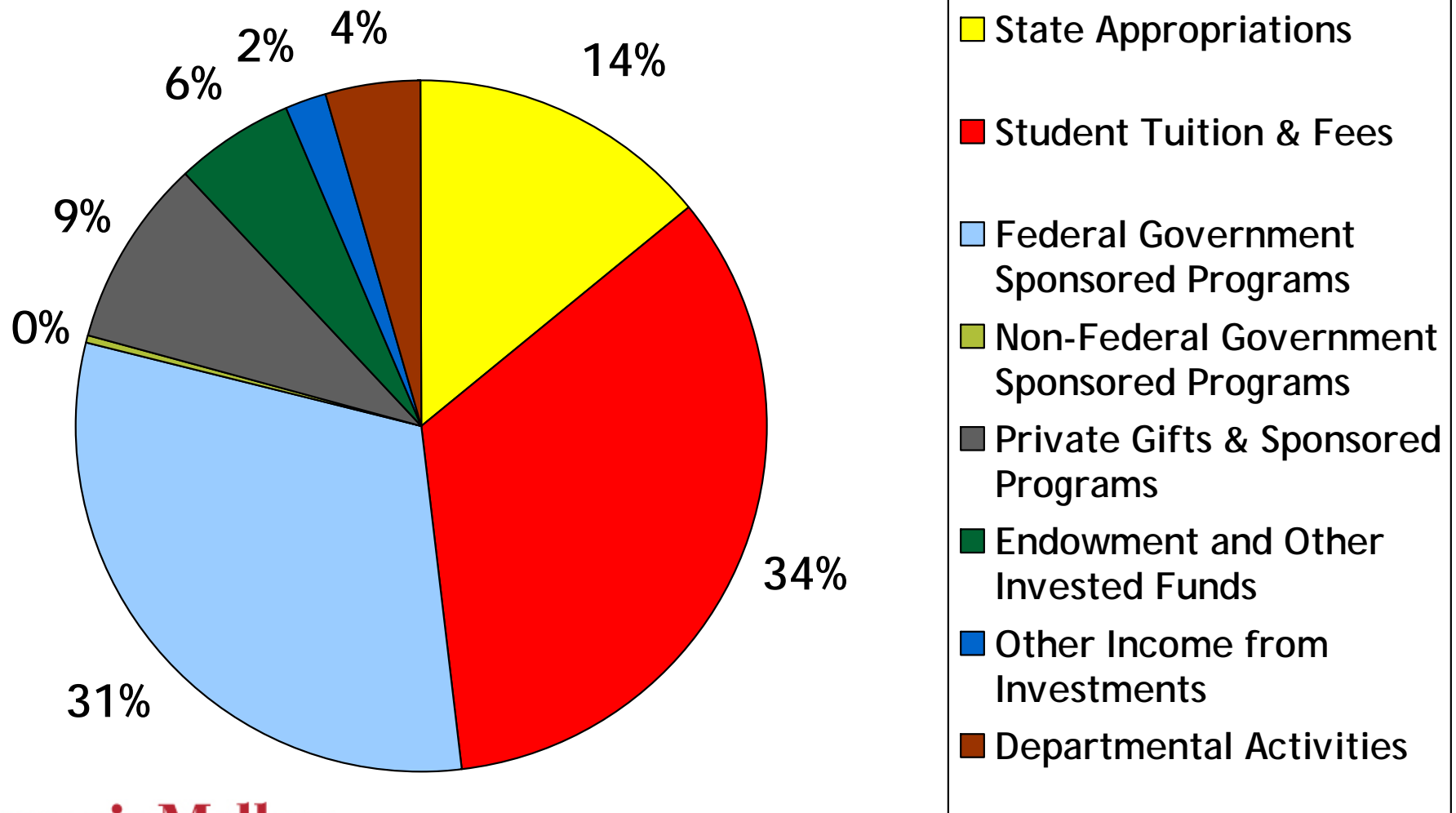
Asymmetric salaries to reward excellence
Univ. of Michigan - Electrical Eng. & Computer Science

Salary (9 month) chart with x-axis from 1 to 81+ and y-axis from 0 to 250,000. Three regions labeled: Assistant Professor, Associate Professor, Full Professor. Annotation "> 2.5 X"

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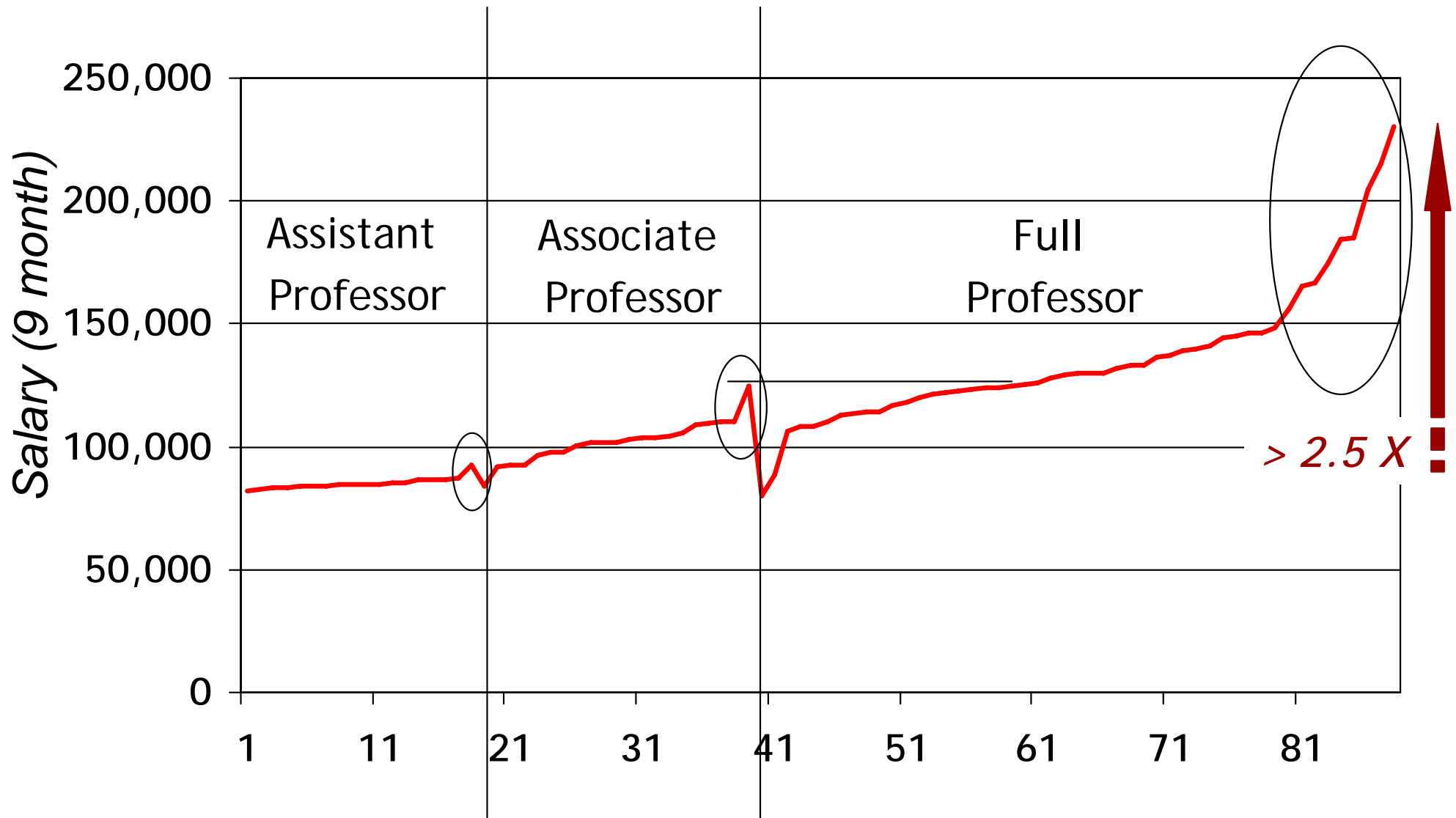
Asymmetric salaries to reward excellence
Michigan Salary Distribution in Nat. Sciences & Eng.
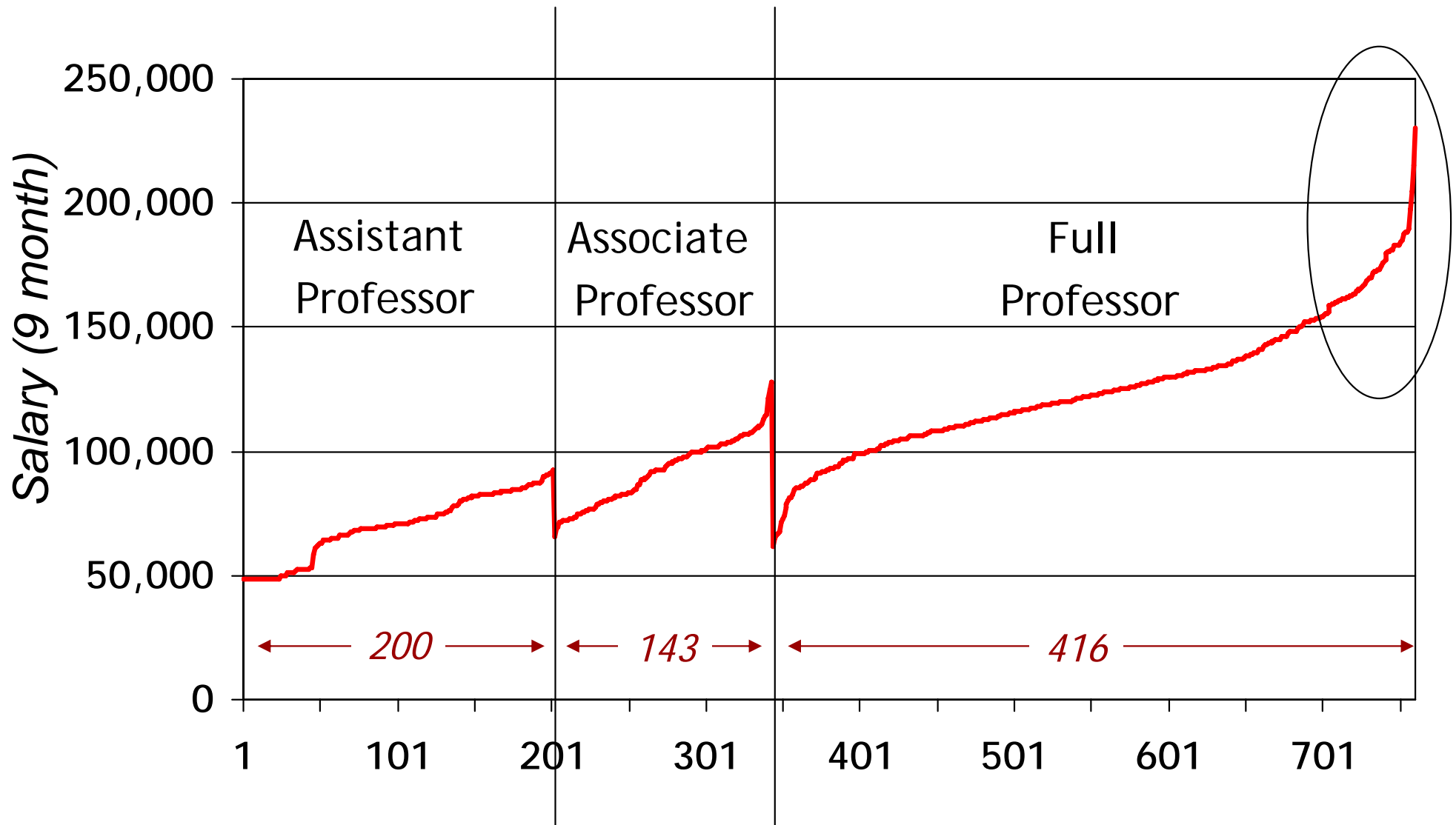
Excludes all professional schools (Business, Medical, Policy, etc.) as well as social sciences. Source: university of Michigan, 2007

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Universities need continuous Innovation
The Example of Carnegie Mellon

- **A Global University for a Globalized world**
  - Campus in Quatar – Undergraduate
  - Campus in Adelaide – Masters in Policy
  - INI - Information Networking Institute dual MS.
    - Athens, Tokyo, Korea, Portugal

- **CMU-Portugal: Long Term Education and Research collaboration in Info. & Communication Technology**
  - Dual MSc Programs in Info Networking, Info Security, Software Engineering, Human Computer Interaction
  - Dual PhDs (ECE, CS, Tech. Change & Entrepreneurship)

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Fostering the Competitiveness of European Universities – Opening Debate!

- **Promote Mobility**
  - ❑ Prevent academic inbreeding
  - ❑ Develop true European market for talent

- **Reward Excellence**
  - ❑ Create system to support European elite schools – in a competitive way! Don't pick winners.
  - ❑ Establish flexible financial mechanisms to attract and secure top talent within elite schools

- **Keep Innovating**
  - ❑ Try new approaches to research & education in environment of global competition for talent

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THANK YOU!

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I would like to acknowledge Hugo Horta
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