



# Opportunities in Science for Young Romanian Researchers

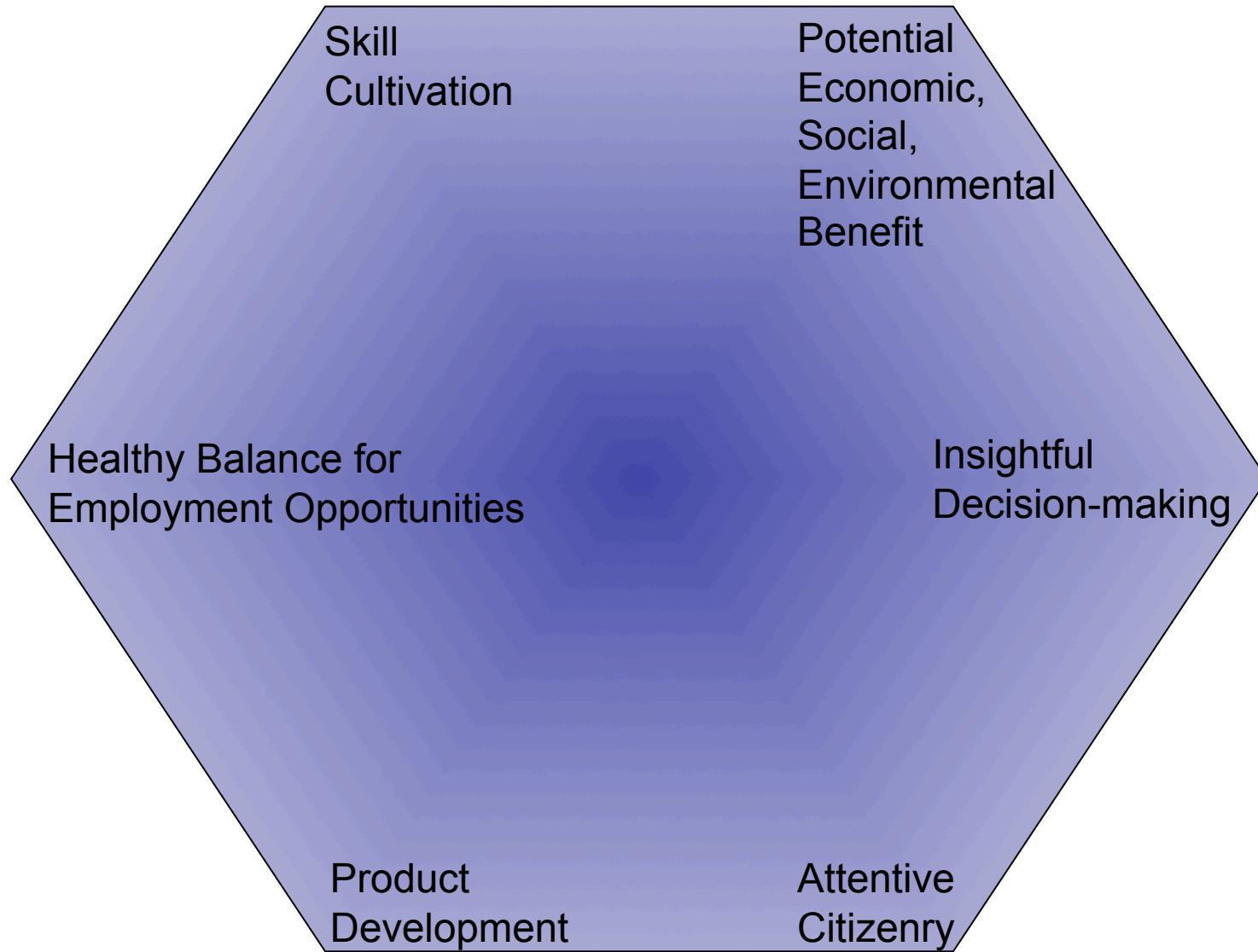
**Meredith Crosby, Ph.D.**  
**Yale University School of Medicine**

**6th Romanian Conference at Columbia University**  
**April 25, 2009**

# Overview

1. Importance of science to society
2. Career trajectories and economics
3. Proactively finding research opportunities

# Societal Value



# Where Are You Going?

Undergraduate Student (4 y)



Graduate Student (2-4 y M.S.; 5-7 y Ph.D.)



Postdoctoral Research Scientist (1-6 y)



Scientific consultant? Patent Examiner?  
Tech transfer worker? Scientific writer?  
Non-governmental organization liaison?  
Product developer? Marketing manager?  
Medical Science Liaison?  
Start-up business owner?  
Scientific advisor to the government?  
Science policy analyst?  
Biotech/pharma scientist?



Faculty

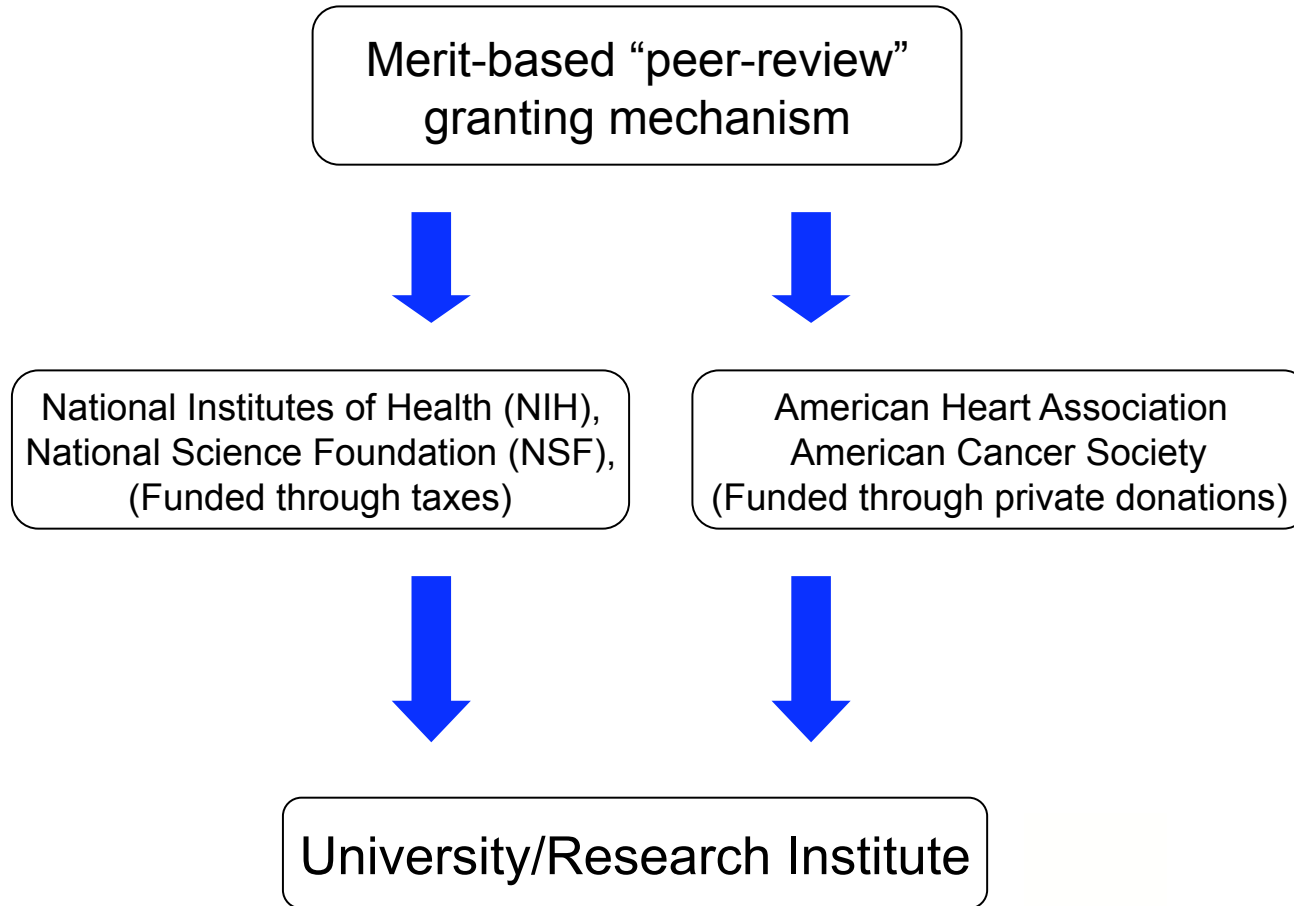


# Research Opportunities: Grants

United States & EU/Romania

Funding mechanisms are merit-based  
upon peer-review

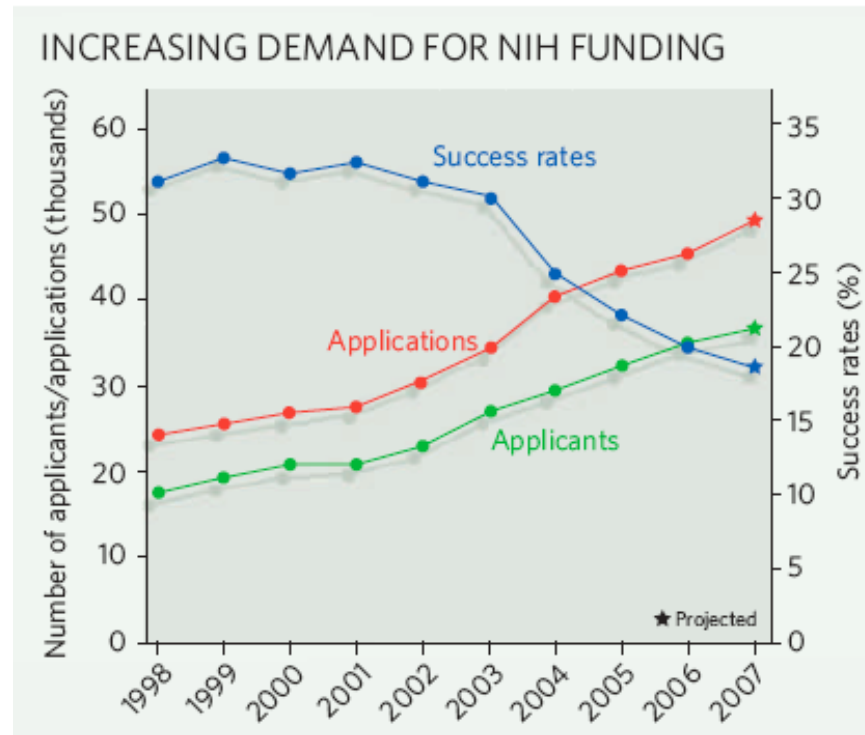
# United States' (Academic) Research



**= Opportunities for graduate students, postdoctoral researchers, research assistants, senior research scientists, administrative staff, principal investigators (faculty)**

# The Young Investigator's Challenge

Awareness: (NIH) funding is cyclical...

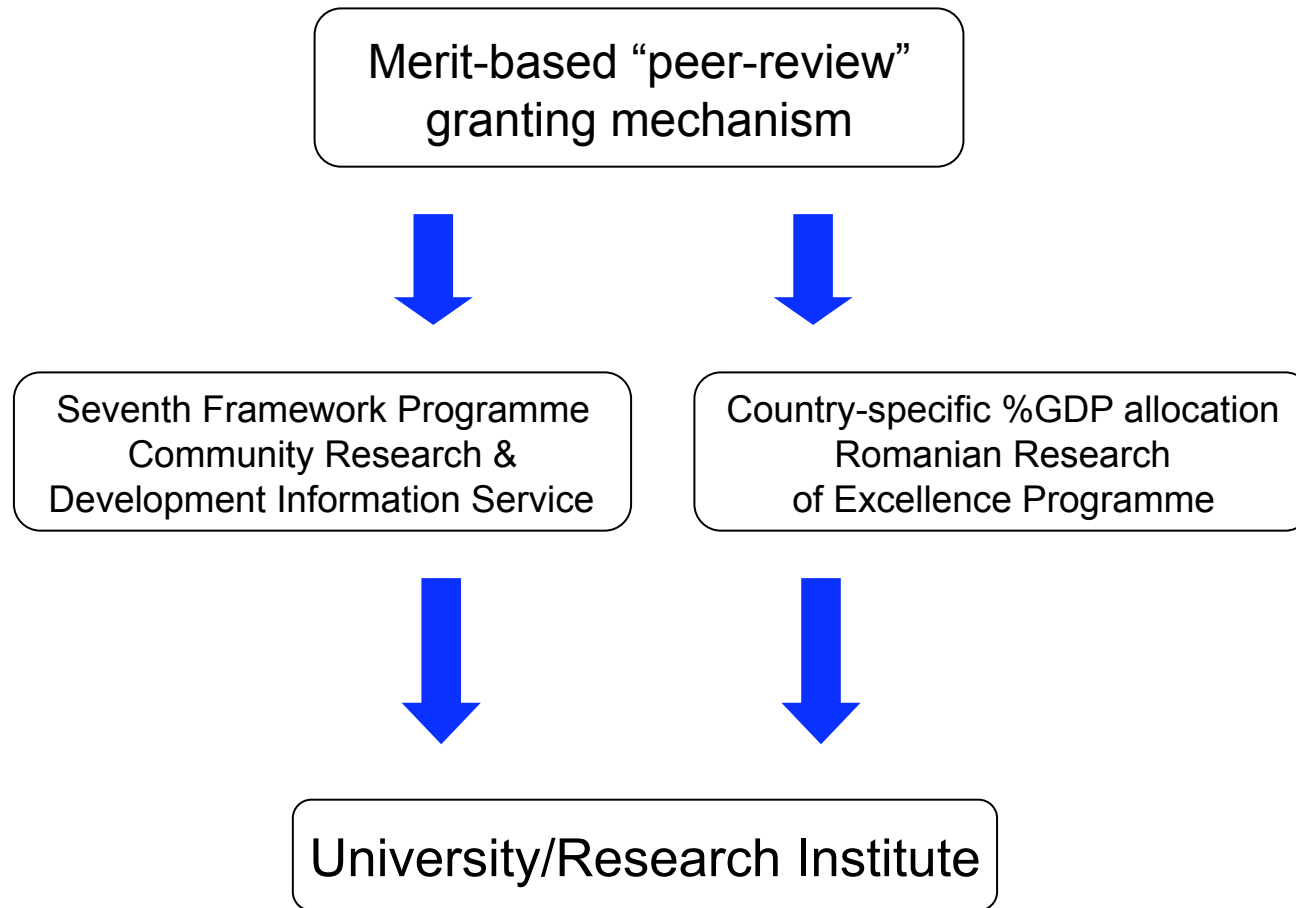


**Novelty:**

**Previous budget doubling (8 y growth) + Potential for unchanged growth: > 3 y**

**= Increased number of postdocs & increased number of applications**

# EU/Romania's (Academic) Research



**= Opportunities for graduate students, postdoctoral researchers, research assistants, senior research scientists, administrative staff, principal investigators (faculty)**



# Strengthening Research Capacity

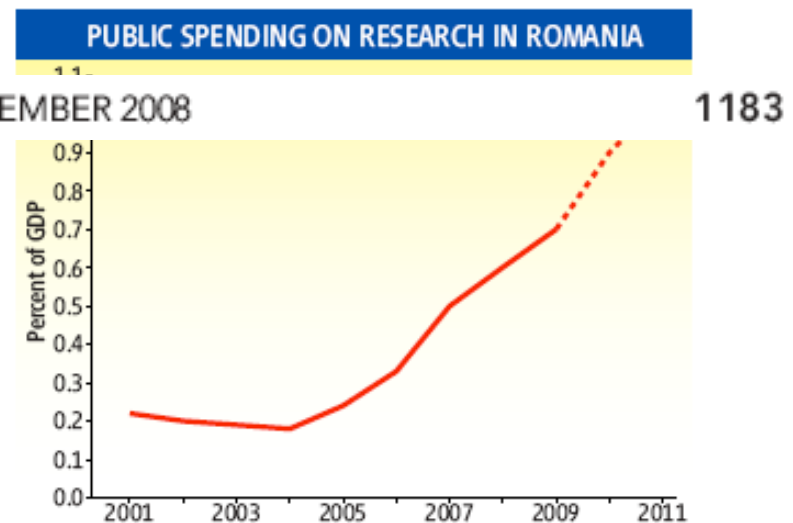
“From a mere 0.22% GDP invested in 2005 for the R&D domain, we reached 0.5% GDP in 2007, and the 2008 R&D budget is 0.75% of GDP. Further, public expenditures for R&D will register a significantly high growth rate. Our goal is that Romania reaches an amount of 1% GDP investments in R&D by 2011.”

(Prime Minister Calin Popescu Tariceanu,

Public Service Review: European Union Issue 15 - Tuesday, March 25, 2008)

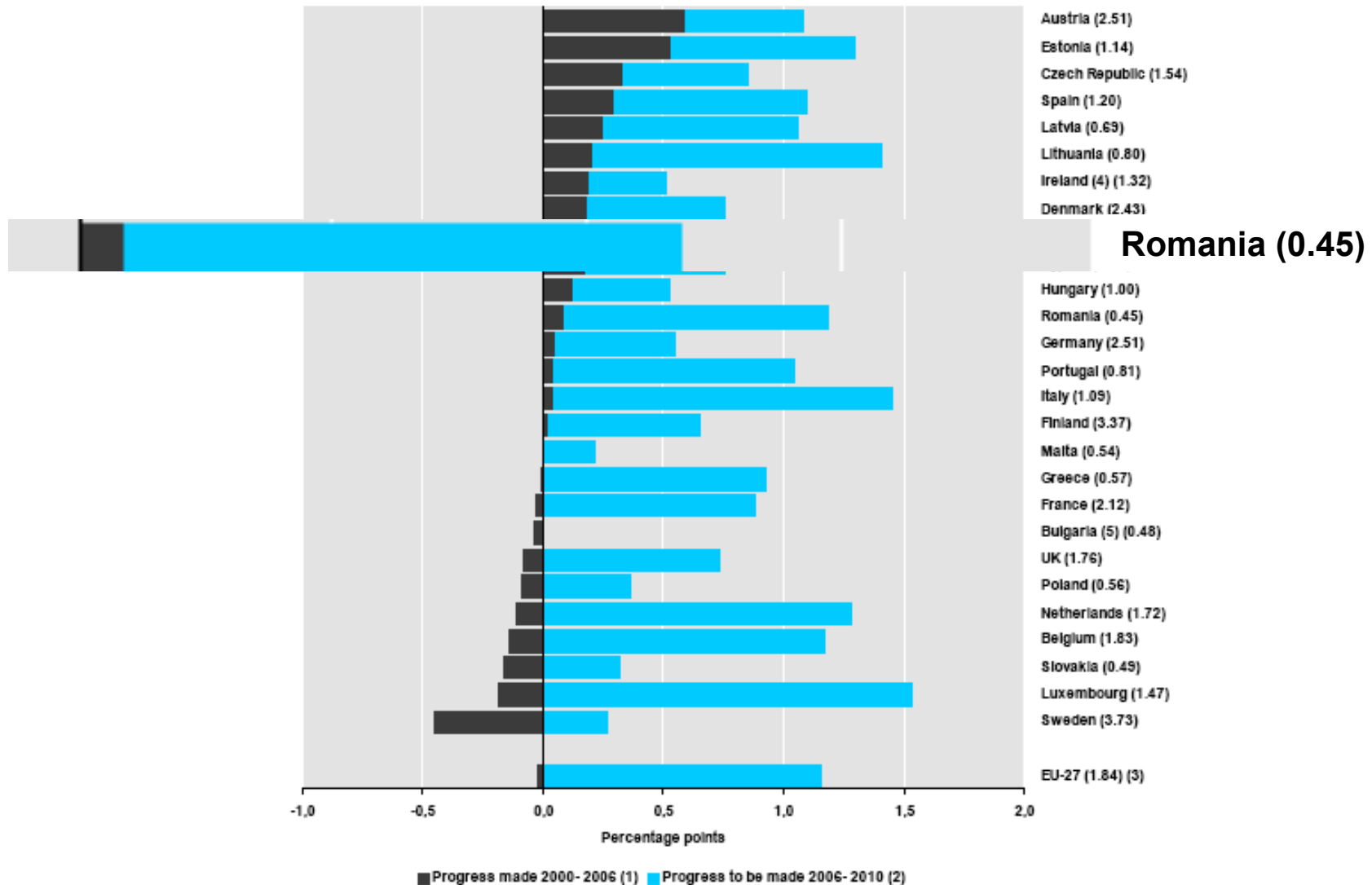


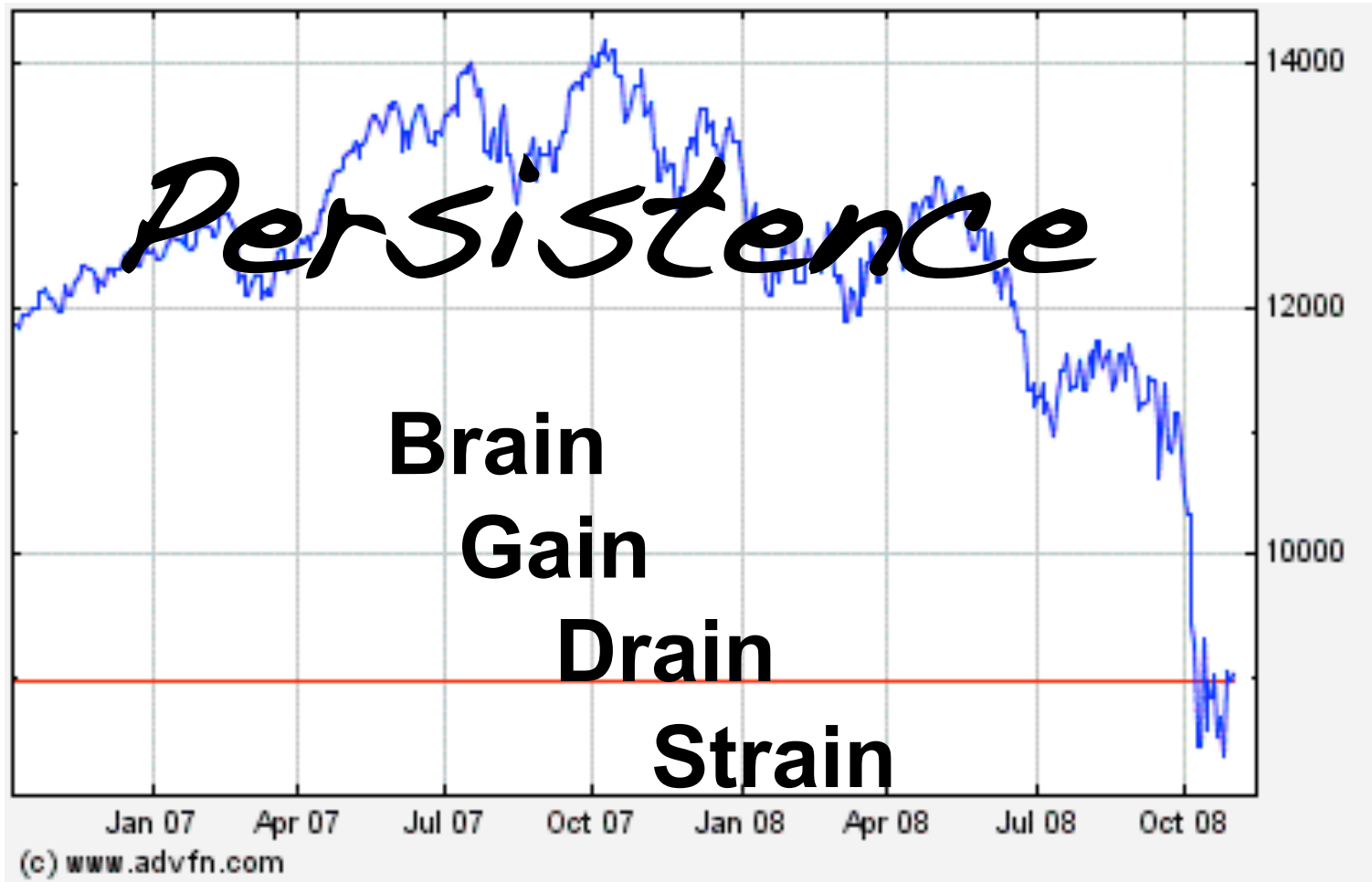
A small association of Romanian scientists, many of them working abroad, is fed up with the slow pace of reforms in their country. And politicians are paying attention



# R & D Spending in EU27

Figure 4.2 R&D intensity - progress towards the 2010 targets (in percentage points)  
in parenthesis: R&D intensity as a % of GDP in 2006 (\*)





# Preparing a Successful Application/Job

**1. Finding the best matches for your science**

**2. Developing a plan of action**

**3. Gathering and managing resources**

*4. Formatting*

*5. Compiling administrative components*

*6. Writing scientific components*

*7. Proofreading/Editing*

*8. Assembling and sending*

# The Young Investigator's Challenge

- Awareness of current funding mechanisms: competition
  - Reduced budgets and/or years of support
  - Decreasing paylines
- Organization is the first step toward success
  - Pay attention to timelines
  - Understand external (grantor)/internal (research institution) guidelines
- Writing: scope of research
  - Assemble preliminary data
  - Prepare a well-constructed research plan
  - Consider pitfalls and the ability to navigate past them
  - Invoke relevance

# The Young Investigator's Challenge

- Editing and proofreading
  - Choose scientific colleagues to proofread the application
  - Estimate adequate time for editing
- Assembling and sending
  - Follow instructions carefully
  - Prepare an informative cover letter
- (Resubmission)

# Getting Organized

## 1. Finding the best matches for your science

### Grant Resources:

- **Internal fellowships (Institution-specific)**
- **External fellowships**
  - **Science Careers and GrantsNet: <http://sciencecareers.sciencemag.org/funding>**
  - **US: NIH Dept. of Health and Human Services <http://grants.nih.gov/grants/oer.htm>**
  - **US: NSF <http://www.nsf.gov/funding/>**
  - **Canada: CIHR <http://www.cihr-irsc.gc.ca/e/780.html>**
  - **EU: The Seventh Framework Programme (FP7) [http://cordis.europa.eu/fp7/home\\_en.html](http://cordis.europa.eu/fp7/home_en.html)**
  - **Human Frontier Science Program <http://www.hfsp.org/>**

# Getting Organized

## 2. Developing a plan of action (Grants)

- **Discuss relevant list of grants with mentor**
- **Plan to devote 2-3 months towards grant writing activities**
- **Collect all materials pertaining to grant**
  - **Instructions**
  - **Application forms: web-based or paper-based**
- **Reference letters: *choose selectively!***
- **Consult with staff at institution(s)**
  - **Business office**
  - **Grants and contracts**
  - **Administrators**
  - **Program scientists**
- **Talk with peers who have gone through process**



# Getting Organized

## 3. Gathering and managing resources (Grants)

- **Consider resources required for proposal**
  - **Tool kit of techniques**
  - **Collaborators/core facilities outside of expertise**
- **Prepare a working library of relevant literature**
- **Consult with staff at institution(s) again**
  - **Business office**
  - **Grants and contracts**
  - **Administrators**
  - **Program scientists**

# Getting Organized

## 1. Finding the best matches for your science)

### Jobs Resources:

- Global job search engines (Indeed, Monster)
- Company-specific job websites (Career page)
- Networking

## 2. Developing a plan of action (Jobs)

- Prepare CVs, resumes, and cover letters; tailor to specific job
- Reference letters: *choose selectively!*
- Talk with peers who have gone through process
- Keep track of your applications (company name, application date, contact names)

“It is nevertheless true that if we arrived on the scene too late for certain problems, we were also born too early to help solve others.”

*Excerpted from*  
**Advice for a Young Investigator**  
**Santiago Ramón y Cajal**

*(Translation by N. & L.W. Swanson)*

**Science is relevant to society and has impact at various levels.**

**Creative resourcefulness is useful for discovering research opportunities.**





