

A large suspension bridge, likely the San Francisco-Oakland Bay Bridge, spans across a body of water. The bridge features tall, lattice-structured towers and numerous suspension cables. The sky is overcast with soft, grey clouds, and the water in the foreground is calm. The overall tone is somewhat somber and atmospheric.

# Building bridges between basic science and clinical medicine: a liberal arts perspective

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# Outline

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- Background and definitions
- Examples of successful programs
- What skills and training should students have?
- Suggestions for program design

# Definition

“Translational research fosters the multidirectional and multidisciplinary integration of basic research, patient-oriented research, and population-based research, with the long-term aim of improving the health of the public.”

*Evaluation Committee of the Association  
for Clinical Research Training (ACRT)*

# Why is it important to implement programs?



Interdisciplinary teams with a wide range of skills are required to find innovative health care solutions



Not enough physicians and scientists are trained in translational research



The skills necessary to develop translational researchers can be taught and learned

# Examples of successful programs



National Institutes of Health –  
Clinical and Translational  
Research Awards



Atlanta consortium



Yale Center for Biomedical  
Innovation

National  
Institutes of  
Health –  
Clinical and  
Translational  
Research  
Awards (CTRA)



Funding for 58 research ‘hubs’



Allow institutions to develop  
their own programs



Support a wide range of  
consortia

# Atlanta Consortium



Includes Emory University,  
Morehouse School of Medicine,  
and Georgia Institute of Technology in  
Atlanta, Georgia



Focus on training junior faculty  
through a two-year Master of Science  
in Clinical Research (MSCR) program



Funded by the NIH

# Yale Center for Biomedical Innovation



Address the gap between basic research and commercialization of health care solutions



Provide expertise in an array of issues, from intellectual property and market assessment to institutional review board processes



Courses and programs are for a wide range of students, faculty, and staff throughout the university



# Key characteristics of successful programs



Training in effective communication



Structured mentoring



Innovative coursework and pedagogy



Institutional support

# How do you teach effective communication?



Practice active listening



Learn to explain your work without using discipline-specific jargon



Have groups set their own standards for communication



Provide opportunities for public speaking with feedback

# What is structured mentoring?



Provide specific training for mentors



Identify roles of different mentors (research, peers, career)



Have written guidelines for both mentors and mentees

# AISS: Example of innovative pedagogy



Accelerated Integrated Science Sequence (AISS)



Combine introductory biology, chemistry, and physics through a problems-based approach



Novel, interdisciplinary labs with teamwork



Assessment showed that students taking this as first year students were more likely to engage in interdisciplinary studies

How do institutions demonstrate support for translational research?



Funding for training programs



Support for assessment



Incentives for participation

How can other institutions implement successful translational research programs?



Training in effective communication



Structured mentoring



Innovative coursework and pedagogy



Institutional support

# Conclusions

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- Innovation in health care requires interdisciplinary teamwork
- Academic institutions, government, and business must cooperate to develop solutions
- All programs should incorporate communication skills, structured interdisciplinary teams, and mentorship training



Thank you!

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