

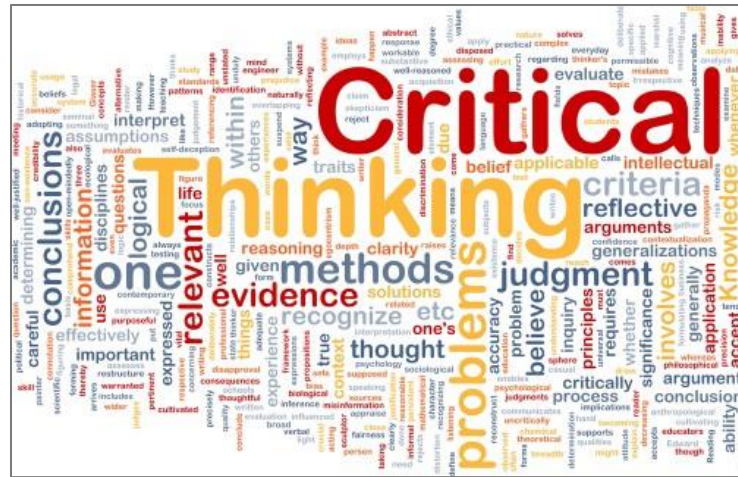
THE IMPORTANCE OF RESEARCH AND THE BIOMEDICAL SCIENCE FRESHMAN RESEARCH INITIATIVE (BFRI)

WHY IS RESEARCH IMPORTANT FOR BMED STUDENTS?



DEVELOP VALUABLE SKILLS THAT ARE IMPORTANT FOR ANY PROFESSION

- Research competencies such as
 - critical-thinking
 - problem-solving
 - thought-processing
 - wise-judging
 - hypothesis formulation
 - methodology delineation
 - results interpretation
 - drawing conclusions



- Communication skills, both written and oral
- Ability to work in a team
- Help you understand and perform better in your courses

BUT I AM INTERESTED IN A MEDICAL PROFESSION...



- Help you choose a specialty
- Gain research experience in a specialty that you are already considering
- Scientific method is not exclusively for research, can be applied to diagnose and treat patients (Evidence-based medicine)
- Interested in doing research and practice at the same time? Have you consider being a physician-scientist?
- Strengthen your resume/CV – research is a highly desired competency for every well-trained medical practitioner

RESEARCH OPPORTUNITIES IN UTRGV

BMED Faculty Research

- **Dr. Alexander Kazansky** - Molecular and cellular biology of cancer development
- **Dr. Andrea Schwarzbach** - Genomics, biochemistry and phylogenetics of medicinal plants and functional foods
- **Dr. Hugo Rodriguez** - Pre-medical education research
- **Dr. Masoud Zarei** - Neuroscience, Protein Targeting
- **Dr. Masako Isokawa** - Neuroscience
- **Dr. Michael Lehker** - Infectious disease, trichomonad pathogenesis
- **Dr. Saraswathy Nair** - Diabetes and obesity in Mexican-Americans
- **Dr. Sue Anne Chew** - Biomaterials for tissue engineering and cancer therapy



Other research opportunities

- Department of Biology
- Department of Chemistry
- Department of Physics
- Department of Psychology
- South Texas Diabetes and Obesity Institute (STDOI)
- University of Texas School of Public Health



BMED INDEPENDENT RESEARCH COURSES

BMED Course	Semester	Topic
BMED 3121: Independent Research I	Sophomore Fall semester	Research Principles and Ethics
BMED 3122: Independent Research II	Sophomore Spring semester	Research Methodology
BMED 3223: Independent Research III	Junior Fall semester	Research Project
BMED 3224: Independent Research IV	Junior Spring semester	Research Presentation

***You will also will be exposed to research in your other BMED courses**

BIOMEDICAL FRESHMAN RESEARCH INITIATIVE (BFRI)

An undergraduate research initiative program that is opened to students in the BS in Biomedical Science (BMED) program

Opportunity to be exposed to and engage in research beginning as a first-year BMED student

You will be have the opportunity to:

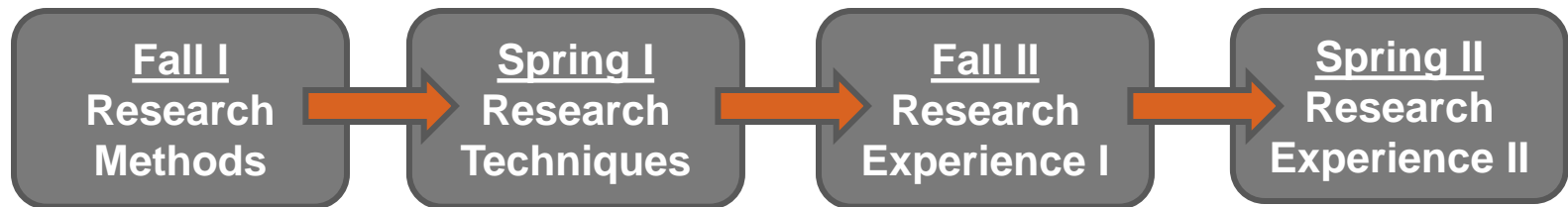
- Learn through inquiry-based learning
- Learn how to design and execute a research project
- Obtain laboratory technique training
- Work on a scientific research project
- while getting credit for BMED courses



BFRI COURSE SEQUENCE

Substitute 4 BMED Courses:

- BMED 3121 : Independent Research I (Freshmen Fall Semester)
- BMED 3122 : Independent Research II (Freshmen Spring Semester)
- BMED 3223 : Independent Research III (Sophomore Fall Semester)
- BMED 3224 : Independent Research IV (Sophomore Spring Semester)



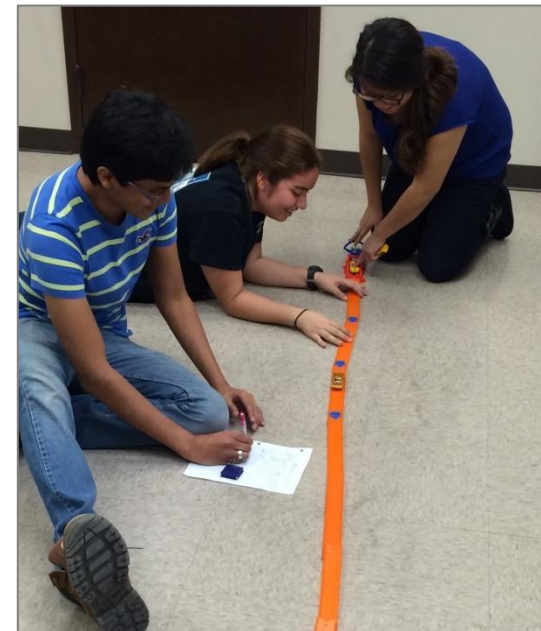
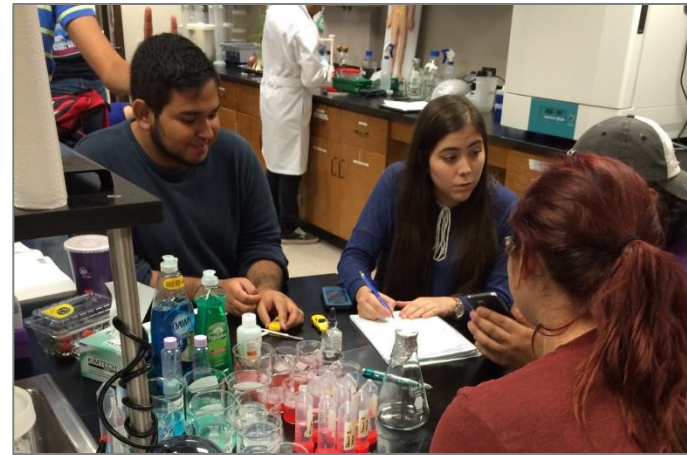
Sorted into research streams for Research Experience courses (2nd year)

RESEARCH METHODS (FALL I)

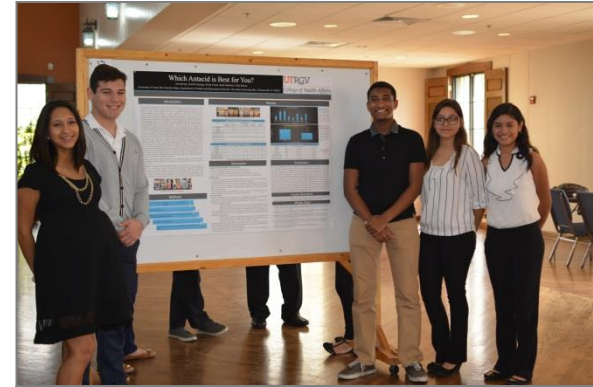
Consists of classroom lectures and activities geared to teach students about different aspects of research such as:

- Scientific literature review
- Formulation of a hypothesis
- Experimental design
- Data acquisition and analysis
- Dissemination of findings

A large component of the course is the design and execution of inquiry-based experiments



BFRI RESEARCH SYMPOSIUM

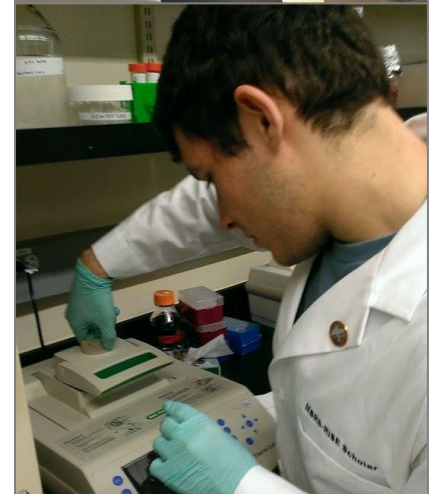
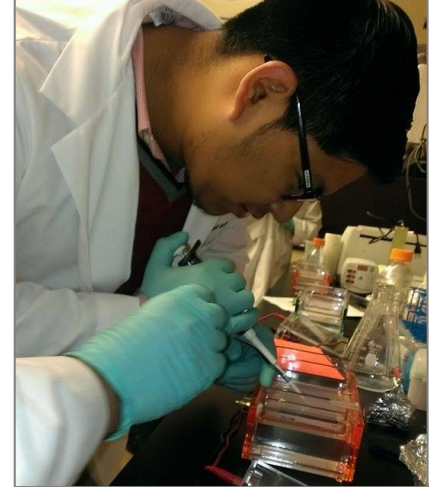


RESEARCH TECHNIQUES (SPRING I)

Students learn laboratory techniques that they may apply in biomedical science research

- PCR and gel electrophoresis
- Immunoblotting
- Aseptic cell culture techniques
- Cell cycle analysis
- Histology

Students learn to keep a complete laboratory notebook and prepare written lab reports

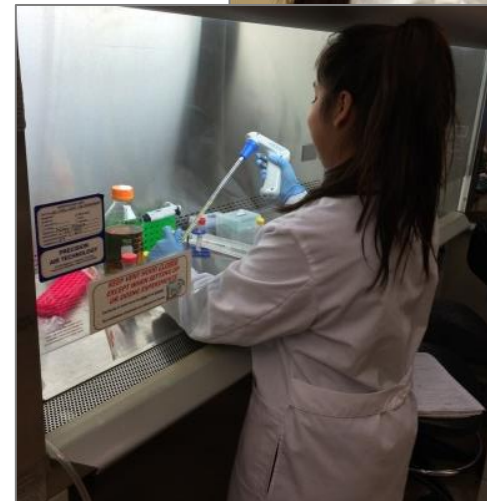
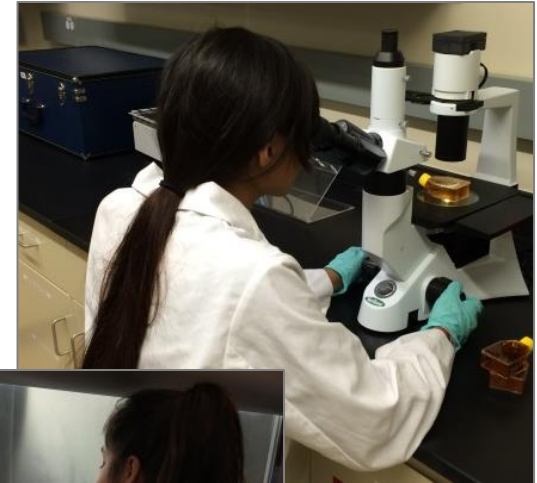


RESEARCH EXPERIENCE I AND II (FALL II AND SPRING II)

In your 2nd year you will be placed
into “research streams”

Work and train under a research
faculty

Perform novel research projects
individually or as a team



Ever wonder what research is?

Enjoy finding answer to questions?

Ever wonder what it is like to be a scientist?

Enjoy discovering new things?

Interested in the opportunity to contribute to scientific knowledge?

BFRI might be right for you!



BFRI courses for Fall 2017 (currently already full):

Independent Research I - 22743 - BMED 3121 - 1BR

Independent Research I - 22746 - BMED 3121 - 2BR

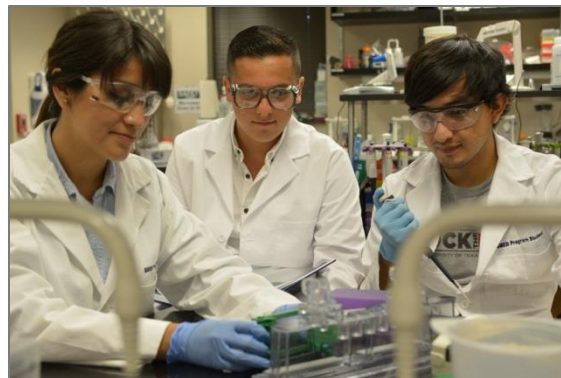
BFRI Contact Information

Dr. Sue Anne Chew

BRHP 2.112, SueAnne.Chew@utrgv.edu

BFRI Website

<http://www.utrgv.edu/hbs/student-engagement/fri/index.htm>



Thank you!