



PITFALLS AND DRAWBACKS OF ENGAGING JUNIOR FACULTY IN INTERACTIVE EDUCATION AND OUTREACH ACTIVITIES

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PITFALLS AND DRAWBACKS OF ENGAGING JUNIOR FACULTY IN INTERACTIVE EDUCATION AND OUTREACH ACTIVITIES

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ADDITIONAL CONTRIBUTORS

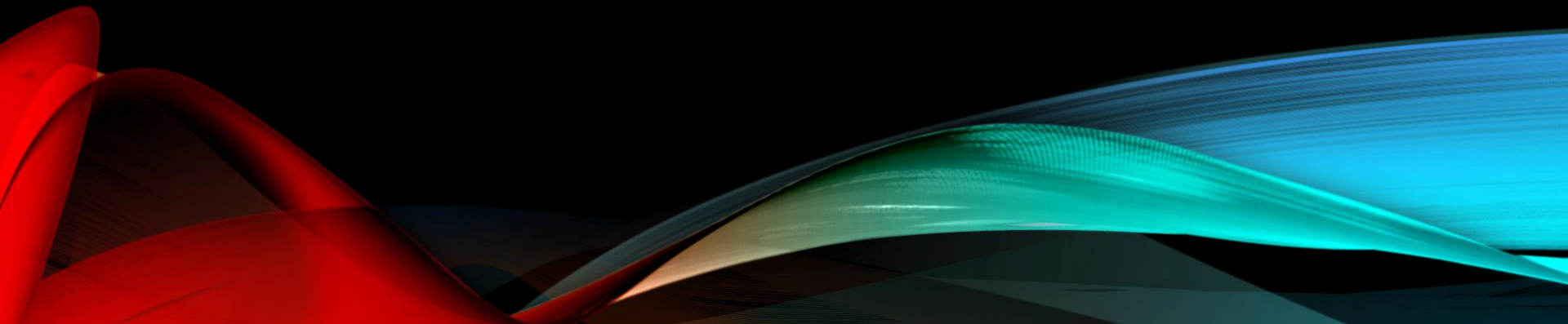
- Prof. Raychelle Burks, St. Edward's University
- Prof. Nicole Gugliucci, St. Anselm College
- Prof. Sarah Hörst, Johns Hopkins University

OUTLINE

- Introduction
- Unsuccessful Efforts
 - UH USIP
 - Mars Rover Celebration
- Success Stories
 - Prof. Nicole Gugliucci, St. Amselm's College
 - Prof. Sarah Hörst, Johns Hopkins University
 - Prof. Raychelle Burks, St. Edwards University
- Conclusions

INTRODUCTION

What am I going to say?

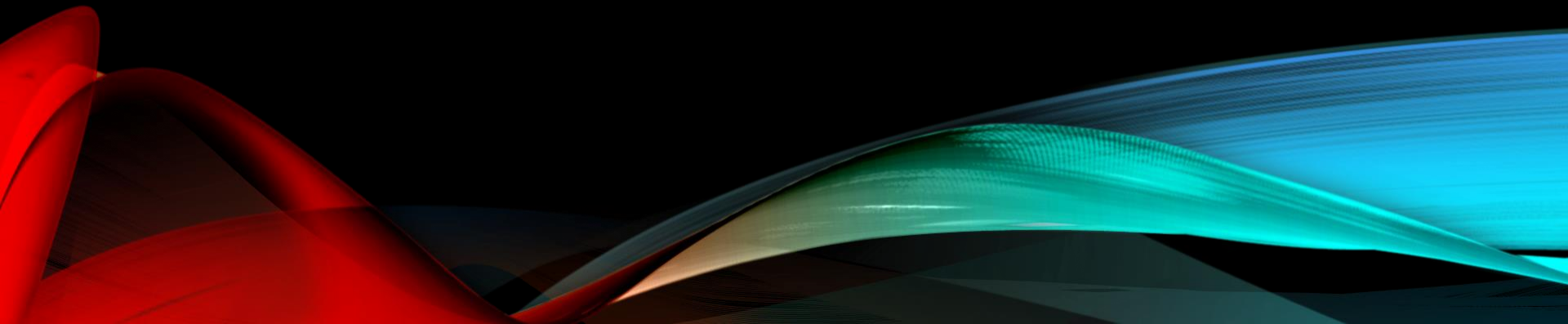


OUTREACH AND JUNIOR FACULTY

- “Education and Outreach” means K-12 and Public in this talk
- Junior Faculty are needed in this effort
- Most Junior Faculty want to do outreach and science communication
- In doing so, they often risk their tenure prospects
- This talk will offer examples, without preaching

UNSUCCESSFUL EFFORTS

Mistakes Were Made



UH UNDERGRADUATE STUDENT INSTRUMENTATION PROGRAM (UH USIP)

- Class is a two year program.
- Teaches undergraduates to build spacecraft through inquiry based learning
- Teaching load is intense. Teaching USIP should count as a full course
- First time, we ran at 4:1 Student:Teacher Ratio
- One of the Engineering Team Left, Recruited 4 Juniors as Replacements
- EPIC FAIL
 - Departments would not assign courses (despite having signed proposal)
 - Junior Faculty who signed up expected monthly drop-ins, instead of
 - Requirement of 10 hours proactively mentoring in the lab.
 - Turned into inactive resume padders

USIP UH

- Teacher – intensive inquiry based learning classes require a-priori buy in from
 - College
 - Department
 - Promotion and Tenure Committees
 - Written Standards Revision

MARS ROVER MODEL CELEBRATION

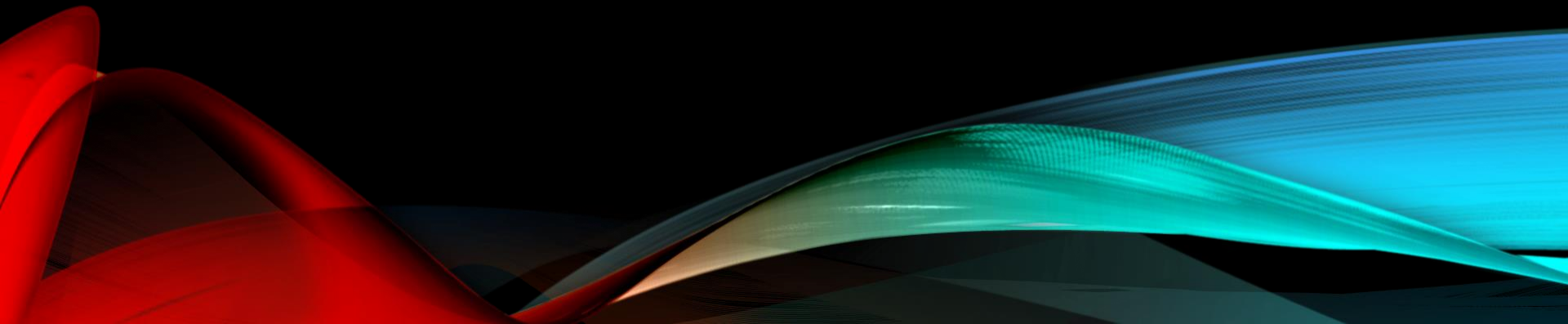
- Two Part Program
 - 15 lesson, 6 week, NASA approved, standards aligned curriculum
 - Grades 3-8
 - Inquiry based project centered space science curriculum
 - Capstone city-wide day long competition at UH
 - Who built the best model?
 - 39 School Districts, 55 Schools, 700-800 Students

MARS ROVER MODEL CELEBRATION

- I ran the program for 15 years.
- Tried to recruit my replacement for last 8 years
- Engaged 3 junior faculty
 - Science Curriculum Specialist
 - Two educational psychologists
- They all fled after ~ 2 years average
 - It took too much time away from pursuit of tenure.
 - Did not count toward approved service
- Finally, UH established a STEM Center, w Senior Faculty Director
 - And I fled...bc USIP was impossible load with this too

SUCCESS STORIES

Junior Faculty who are making a difference



THE EXEMPLARS

- Prof. Raychelle Burks, St. Edward's University
- Prof. Nicole Gugliucci, St. Anselm College
- Prof. Sarah Hörst, Johns Hopkins University

Dr. Raychelle Burks

Assistant Professor of Chemistry



Scholarship

Chemistry
World

#TraceAnalysis

SciPop
Talks!

Service

Teaching



ST. EDWARD'S
UNIVERSITY



DIY
SciENCe
ZonE



TWO RESEARCH PLANS

Lab Work (ie Science)

- Analytic chemist
- Specializes in Forensics
 - Actual research
- *Chemistry World* column

Informal Science Education

- *SciPop Talks!*
- *@DrRubidium*

Professional Service

- DIYScience at GeekGirlCon
- Outrageous Acts of Science

PROJECT PLANNING

- Projects must hit both professional and personal targets
- Need teammates and mentors to help find them
- Service should be minimized unless “research-ized”
 - Data driven with publications
- Need supportive management
- Revised P&T Criteria

NICOLE GUGLIUCCI

@NOISYASTRONOMER



- Radio Astronomer
- Mostly Ad hoc
 - Star parties
 - Speaking to local groups
- Joined pro-outreach Department
- College is committed to Community Service
- Science Outreach Coupled to Community Service is Particularly Valued

SARAH HÖRST



- Lead Organizer, Teacher Training Workshops at DPS Annual Meeting
- Major Public Presentations (8)
 - Adler After Dark “Planetary Prom”
- K-12 Presentations (~1/year)
- Press Interviews
- Social Media
 - @PlanetDr. (~29000 followers)

SARAH HÖRST

- Active, successful researcher
- Won ~\$1.4M in grants since starting on Faculty in 2014
- One Postdoc, 6 Graduate Students
- 21 Publications

- Has no arrangement for counting outreach in any special way at tenure time

CONCLUSIONS

- Setting up to make it easy for junior faculty to step into ongoing projects tends not to work
- It helps to have a pro-outreach Department
- Have an approved plan
- Organize grant-generating, publishing outreach programs
- Or meet your mainline obligations with enough time leftover to do outreach