

Interdisciplinary Learning through Vertically Integrated Projects for Sustainable Development (VIP4SD)



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In VIP UG students work in teams

With students from other years of a course

With students from different disciplines

With postgraduate researchers/staff

On real HARD problems

Rolling on year to year each time into a more senior position in the team.

Making them 'ready for graduate employment'



In VIP



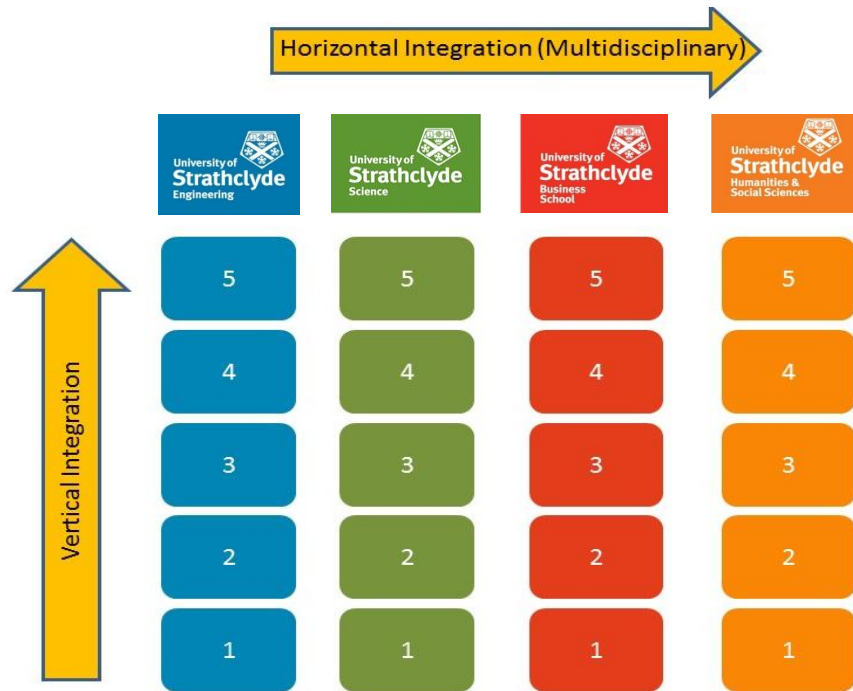
UG students get the Chance to -

1. *Lead a Group*
2. *Show Initiative*
3. *Plan Work*
4. *Be Flexible*
5. *Take Ownership of Own Learning*
6. *Work with Students from different years and subjects.*

VIP Program Architecture: The Basics

Enable Long-Term, Large-Scale, Multidisciplinary Teams

- Teams led by Acad. Staff; embedded in their S&E activities
- Large teams: 10-20+ undergraduates; 1-4 grad students
- 2nd through *final year* undergraduates students on every team
- Long-term participation – up to 3 years per student
- New students replace those who graduate
- Students drawn from *all* disciplines needed by the project
- Teams continue for many years
- Academic credit and grades each semester



- VIP enables:
 - UG engagement in research-based learning
 - PhD pipeline
 - Continuity in research
 - Long-term research goals to be tackled
 - Interdisciplinary research
 - Collaboration
 - Building track-record for larger grants

VIP Consortium



49 Consortium Institutions

South America

Universidad de Chile
Universidad del Norte
Universidad ICESI
Universidad Mayor
Universidade Estadual de Campinas

Europe

Malmö University
Riga Technical University
Rīga Stradiņš University
University of Bath
University of St. Andrews
University of Strathclyde
University of Galway

Asia

Inha University
National Dong Hwa University
National Taiwan University

Middle East & North Africa

American University of Beirut
Lebanese American University
The American University in Cairo

United States

Arizona State University
Boise State University
Colorado State University
Drexel University
Georgia College and State Univ.
Georgia Institute of Technology
Georgia Southern University
Georgia State University
Howard University
Iowa State University
Kennesaw State University
Morehouse College
NYU Tandon School of Engineering
Polytechnic University of Puerto Rico
















Africa & Australia

University of New South Wales
University of Pretoria
Strathmore University

Purdue University
Rice University
Stony Brook University
Texas A&M University
The Cooper Union
University of Arizona
University of California Davis
University of Delaware
University of Georgia
University of Hawaii
University of Michigan
Virginia Commonwealth University
Virginia Tech

Strathclyde Project page

Department/Subject Year of Study Sustainable Development Goal [Start over](#)

 Achieving Equity & Equality in STEM	 Energy for Development	 Enterprise
 Intercultural Learning for Sustainability	 Integrated Systems for Decarbonising Aviation	 Powering Rural Agriculture in Low Resource Settings
 RoProHand: Robotic Prosthetic Hand Design	 RoVER: Robotic Vehicles for Education and Research	 Satellite Data for Sustainable Development
 Smart Grid Monitoring & Visualisation Platform	 Smart Voice: A voice analysis app for sustainable health monitoring	 Solar Microgrids for Sustainable Development
 STEM Education and Public Engagement	 Sustainable & Resilient Cities for the Global North & Global South	 Apps4Good

Teams | Vertically Integrated Proj

https://www.vip.gatech.edu/teams

BBC iPlayerPegasus LoginChess.comBBC - homepage...Yahoo MailGoogle MapsSend filesUni emailBT Home Hub Man...Remote Access - Ch...Send AnywhereTelephone Director...DropboxEDAS (159905 - s.m...Other favourites

Georgia Tech

Vertically Integrated Projects

Find a VIP Team...

TeamsAboutStudentsFacultyStaffSupportInnovation Showcase & Competition2023 Consortium Meeting

By Majors

☐ Business (39)

☐ Computing (80)

☐ Design (29)

☐ Engineering (78)

☐ Ivan Allen (29)

☐ Other (61)

☐ Physics (11)

☐ Sciences (51)

By Methods & Technologies

Search here...

Approved by Depts for Specific Policies

☐ BIOS Approved (6)

☐ ISYE Group 2 (15)

☐ PHYS Approved (3)

UN Sustainable Development Goals

☐ 01 No Poverty (2)

☐ 02 Zero Hunger (4)

☐ 03 Good Health and Well-being (13)

☐ 04 Quality Education (15)

☐ 05 Gender Equality (3)

☐ 06 Clean water and sanitation (1)

☐ 07 Affordable and Clean Energy (8)

☐ 08 Decent Work and Economic Growth (5)

☐ 09 Industry, Innovation and Infrastructure (66)


☐ 10 Reduced Inequalities (10)

Teams


Results per page 20

1-20 of 86 results

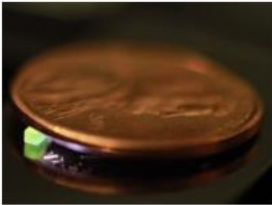
12345nextlast




NEW TEAM: Better Place Drones




2D Heterostructure Synthesis




3D Printing on the Nanoscale



ACT Driving Simulator



AI-based Discovery and Innovation



AVA Digital Human

8°C Sunny

Search

ENG UK10:34 14/04/2023

Polarised Growth



Provides model based on analysis of data



Provides images of stained hyphae to test model

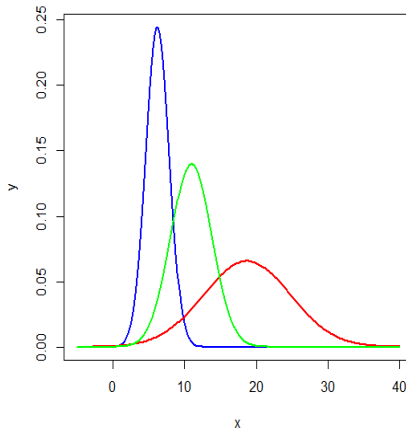
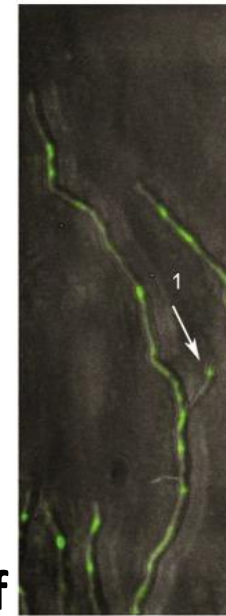
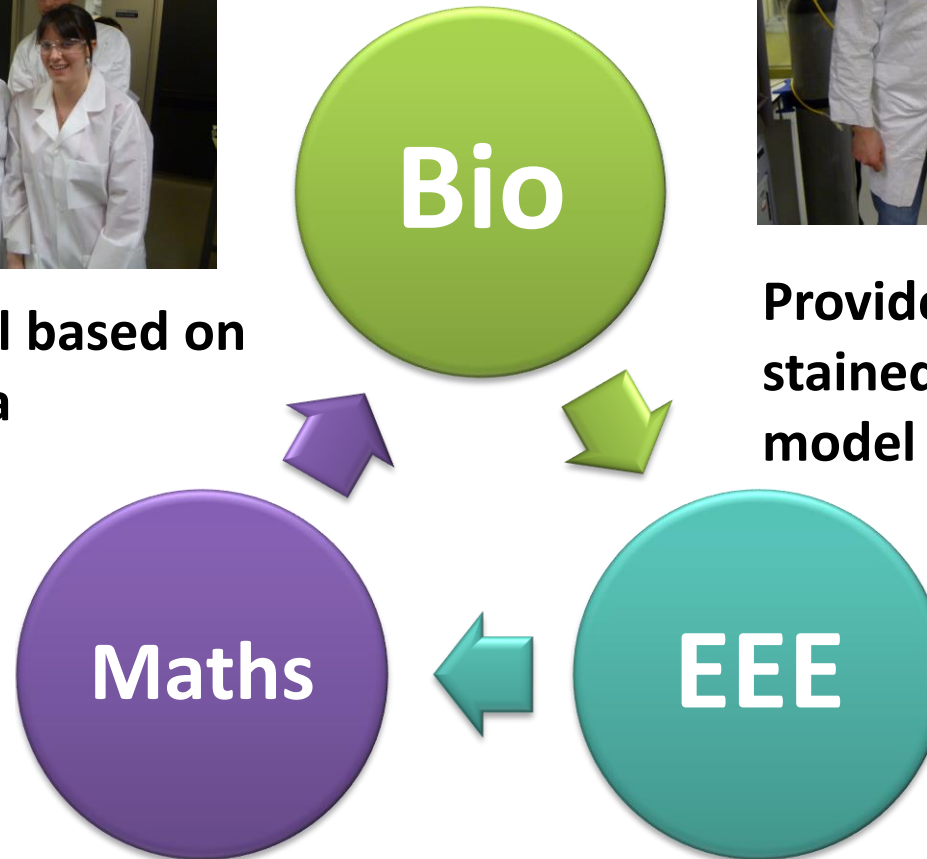
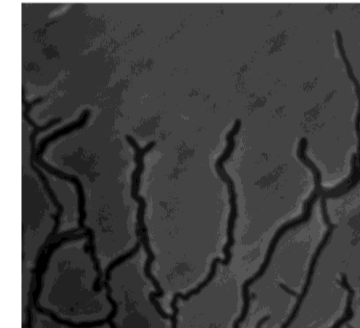


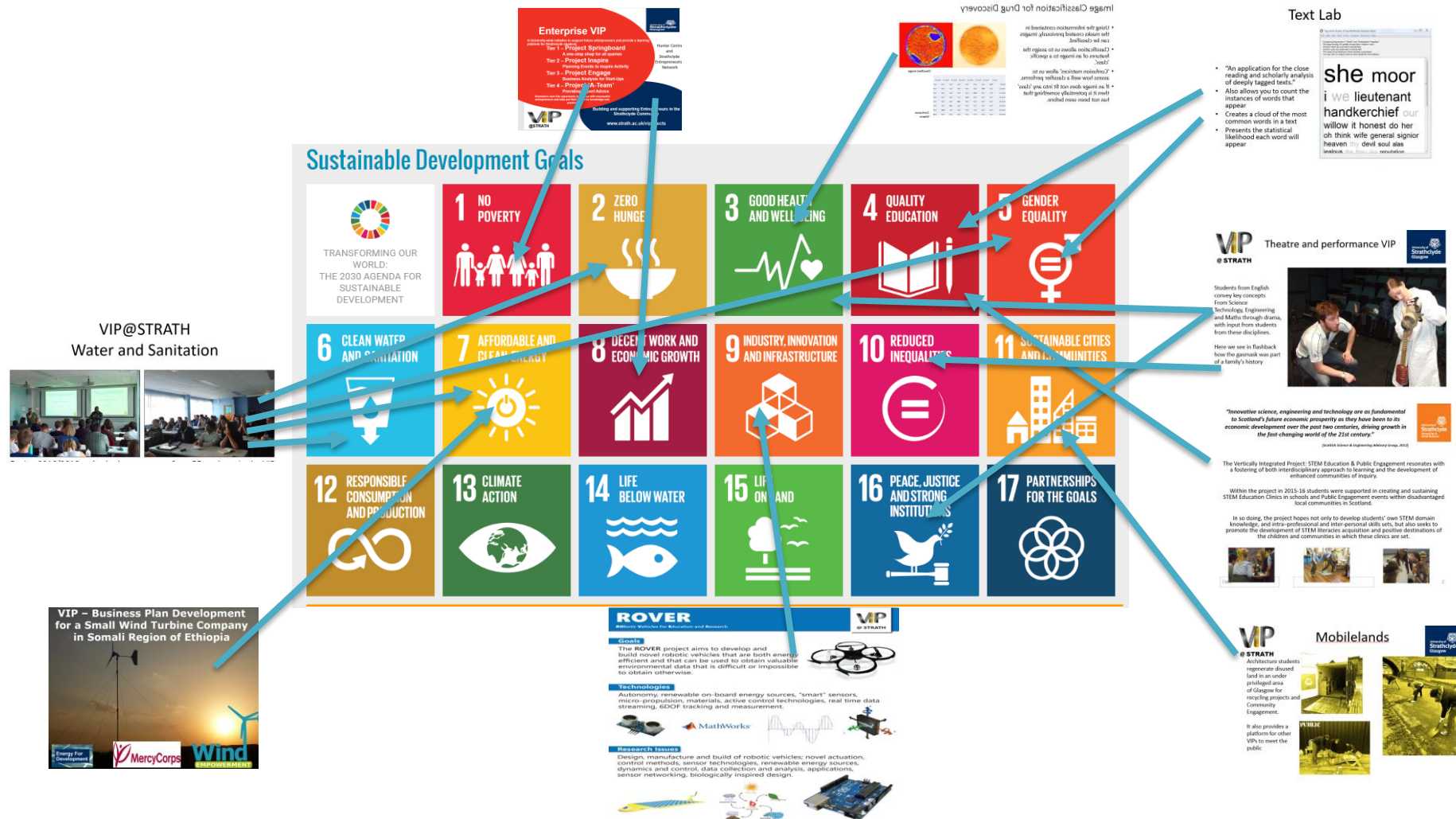
Fig. 3 Normal distribution curves

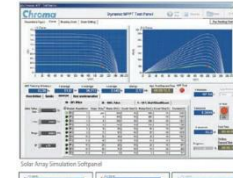
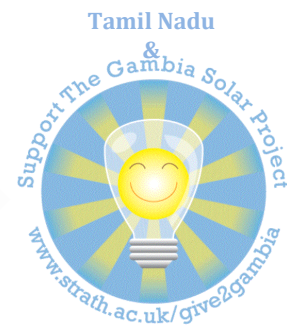


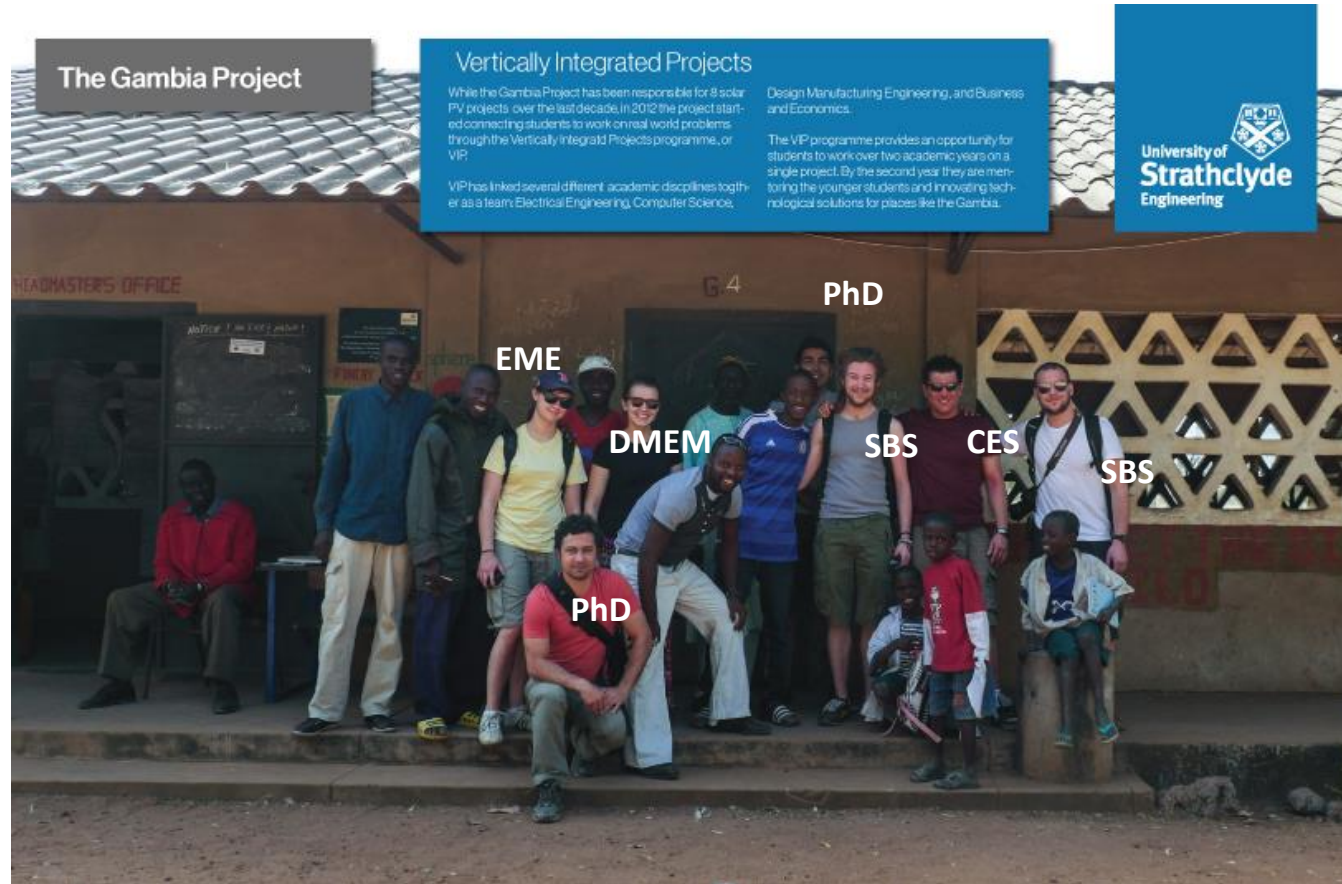
Provides data from images



Strategic alignment with United Nations Sustainable Development Goals



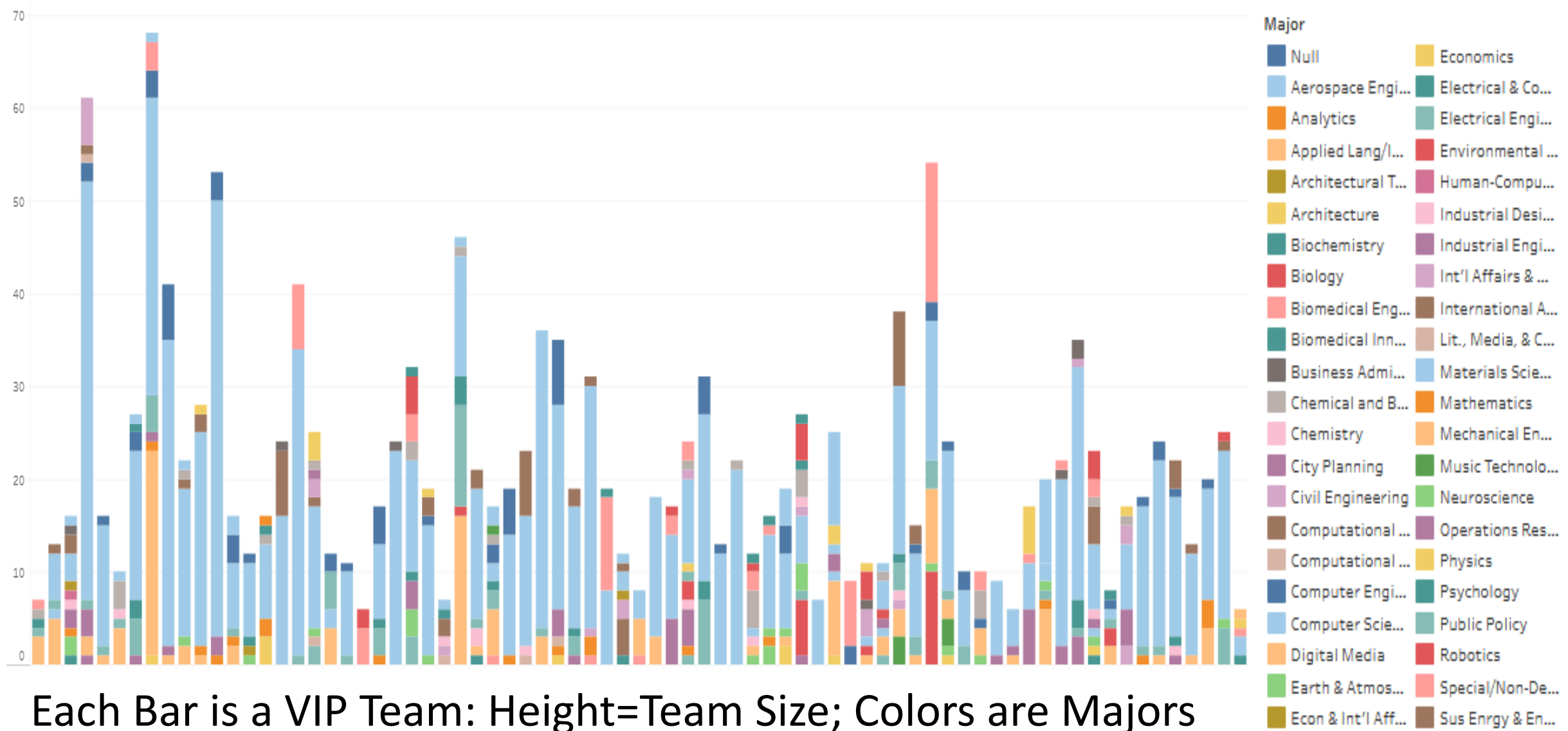




Bold, Ambitious, Innovative and Collaborative

Scalable: 84 VIP Teams in Fall 2022

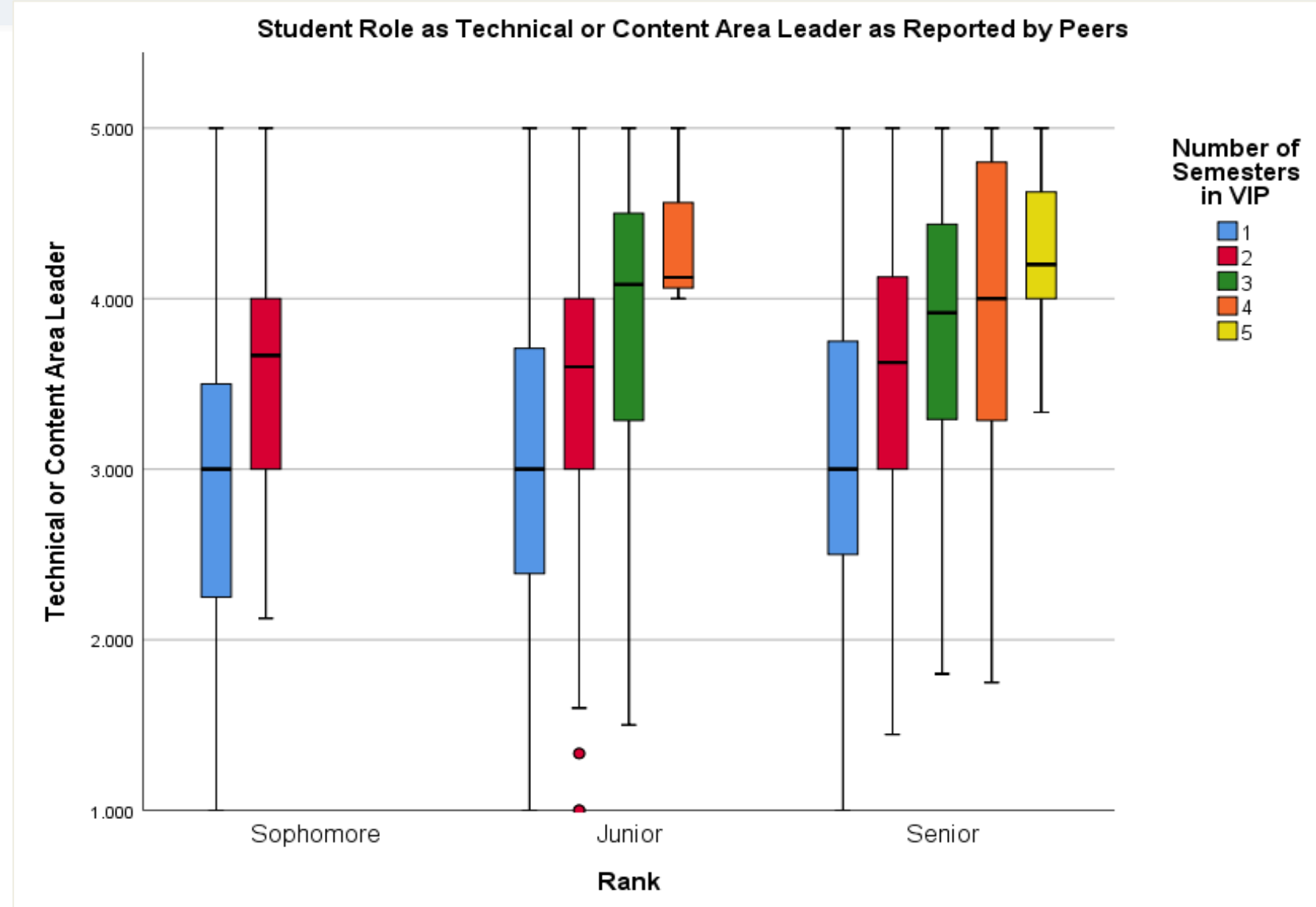
Team Size and Disciplinary Composition



Student Leadership – Technical/Content Areas

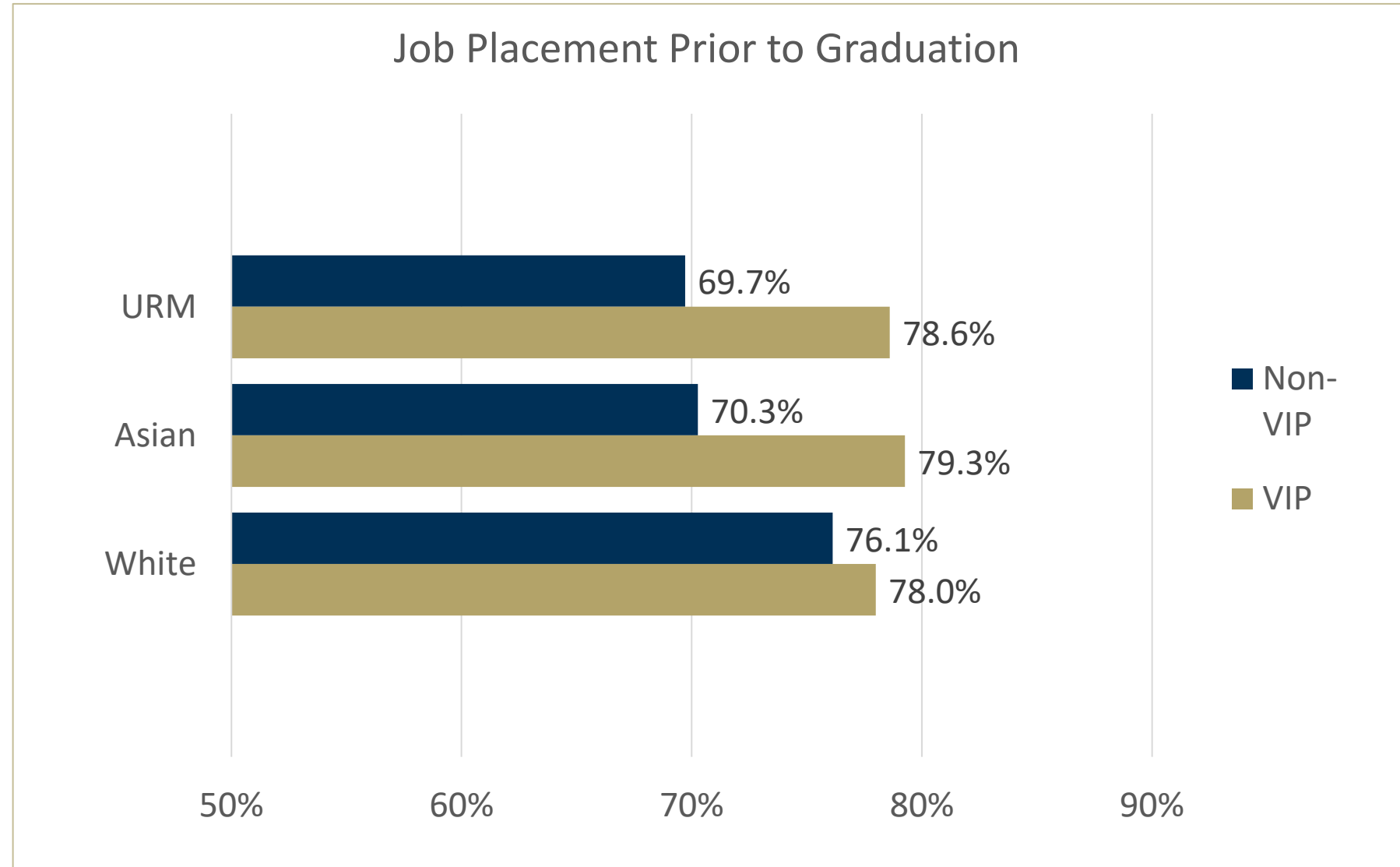


Role as technical/content area leaders **as reported by peers**



No Inequity among VIP Participants

- Gains for all races/ethnicities
- Compensatory gains for URM & Asian students
- Representative enrollment of URMs in VIP
- **Not published** digging deeper to understand





@ STRATH

VIP4SD Conference





VIP Implementation Team



Steve Marshall EEE,
VIP Co Director and Academic Lead



Scott Strachan
VIP Co Director and SD coordinator

Louise Logan VIP4SD Program Manager



[Video](#)



University of Strathclyde



University of
Strathclyde
Glasgow

Thank you

