Virgil Orr Junior Faculty Award Packet – Jane Jacob

Part 1: Activities to Benefit Students, Faculty, and University Community (selected)

Students:

1. Deployed 'flipped classroom' teaching strategies in order to engage students in deep-learning activities in the classroom.
    - HRNS 112 (Foundations of Behavioral Thought) provides undergraduate students with an introduction to the field of Psychology; I decided on utilizing this teaching method for this course because it is a great way for students to engage with the material at great depth, allowing time in the classroom for demonstrations of psychological concepts through interactive tools such as active discussion, role-playing, working together to generate solutions to prompts and applications to daily life.
    - PSYC 302 (Physiological Psychology), a core course of the Psychology undergraduate curriculum, helps students gain a deep understanding of neuronal structures and brain processes that underlie and regulate behavior, and additionally how the environment impacts the brain. For many students, this course is one of the hardest in the major, particularly due to a fear of or poor understanding of biological processes. I noticed that many students were unable to verbalize or demonstrate their grasp of the topics. I decided to flip this course in order to provide students multiple points of engagement with easily accessible recorded lectures, class discussions, multiple assessments resulting in distributed learning (and avoiding cramming), and lots of practice in verbalizing their apprehension of the topic. Many students have reported success with this form of teaching.
2. Proposed and taught the first online offering of PSYC 300 on Tech's main campus, making the core course more accessible to students.
    - I am also the first to deploy MyStatLab, an online platform providing multiple examples, with guides and corrections at each step of statistical calculation. Usually, students would need to work through an entire problem set and submit the work to learn of errors in their understanding.
3. Proposed, prepared, and taught new course PSYC 442 (The Mind-Body Problem), which is an exploration of historical, philosophical, and biopsychological perspectives of "the mind". The course is designed to engage students in discussion, integration of various ideas, and practice in rhetoric through an intense journey to learn about what it means to be conscious, and the controversies surrounding it.
4. Engaging in active learning practices in PSYC 602 (Physiological Psychology) and PSYC 628c (Cognitive Psychology) through peer teaching presentations, projects drawing

connections between topics at hand and elements of the graduate students' respective fields of study, and application of learned concepts to examples of every day behaviors and case studies.

5. Providing mentored research experiences for undergraduate students across departments with data collection using Electroencephalography (EEG). When the pandemic hit and volunteers were no longer allowed in the lab, I provided these research experiences through PSYC 460 (Field Research in Psychology), where students learned how to read journal articles, summarize them, and present findings, in addition to EEG basics. These experiences are key for students who are preparing to go to graduate school in Cognitive/Clinical/Experimental Psychology/Neuroscience.
6. Preparing first- and second-year doctoral students (via PSYC 600) to teach introductory-level courses in the department through studying and implementing effective practices in andragogy, student engagement, inclusion, classroom management, and other methods by which to best serve the undergraduate students in their courses.
7. Advising 30-45 students per quarter on courses to finish their degree requirements, good study habits, and preparing for higher studies.
8. Serving as co-advisor to Psychology Society/Psi Chi (LA Tech chapter of the Psychology national honor society), working closely with student leaders to help students navigate the Psychology major, prepare for graduate study or work after their baccalaureate degree.
9. Serving on the Premedical/predental interview committee, completing 15 minute interviews with premed and predental students each spring, evaluating and writing recommendations for the 50-55 interviewees, each of which get incorporated into a composite committee letter that the interviewee uses for medical- or dental-school applications.
10. Serving on Dissertation committees within the Psychology department and in Biomedical engineering.

Faculty:

1. Serving on University Senate
2. Serving on the Committee to review Tenure and Promotion Criteria in COE; we aim to review and update criteria for tenure and reduce the factors leading to fear, ambiguity, and subjectivity in the current process.
3. Helped fellow faculty members by scanning curriculum sheets for Psychology advisees and making them available in a protected, shared folder for early advising in the Spring quarter.
4. Helped digitize the annual evaluation process for the Department of Psychology, making the process accessible during the pandemic, when face-to-face meetings were not

possible. Additionally, the digital setup allows greater ease of access for faculty member and department head for document uploading and tracking across evaluation years.

5. Proposed, organized, and facilitated the creation of Research Accountability Group in the Psychology department. This group serves as a space for faculty members to share and keep up with research goals, encouraging each other to be research-productive and offering moral support for the journey.

University:

1. Wrote and submitted a Board of Regents Enhancement grant in my first year to acquire a high spec video-based eyetracking system for the University.
2. Was first author on a Board of Regents Enhancement grant to get computers to help with the shortage of working computers for students taking courses in the computer lab in Woodard Hall.
3. Serving as an iChange Fellow as part of Tech's Aspire IChange effort around advancement of STEM faculty from underrepresented groups.
4. Chaired a faculty search committee in my second year, resulting in the successful hire of Dr. Kacie Mennie to the Department of Psychology and Behavioral Sciences.
5. Arranged and coordinated the visit of Dr. Derek Nee for a lecture in the New Frontiers in Biomedical Research lecture series. Through his visit, I arranged and facilitated conversations with Deans across colleges to facilitate discussions on the need for more interdisciplinary collaborations and dissemination of research interest and opportunities to partner with researchers across departments.
6. Spoke about the collegiate experience with prospective students at Time Out for Tech and Legacy Day events, in addition to meeting with campus visitors every quarter.

Note: Typically, this section would be accompanied by course evaluations. However, I was unable to get these from my supervisor due to an unforeseen emergency. Instead, I have included taught courses with overall teaching evaluations.

Course	Overall Rating (Fall 17-Winter 21)
Physiological Psychology (PSYC 302)	3.7
Foundations of Behavioral Thought (HNRS 112)	3.7
Physiological Psychology (PSYC 602)	2.7
The Mind-Body Problem (PSYC 442)	4.0
Cognitive Psychology (PSYC 628c)	3.0
Issues in Academic Psychology and Teaching (PSYC 600)	4.0
Field Research in Psychology (PSYC 460)	4.0

Part 2: A statement of the nominee's beliefs concerning the importance of teaching, research, or other services and activities.

Teaching: I believe that my role as teacher is to move knowledge forward - taking what I know, and imparting it to my students. In order to foster deep learning, it is important to show students how knowledge can be applied in their everyday lives, to spark their interest for the subject matter, and to instill in them important skills that will foster lifelong learning. Across my courses, I try to accomplish this through active learning strategies (as mentioned in examples in part 1 of this document) to facilitate student engagement and content retention. Additionally, I believe that it is important to encourage students at the collegiate level to practice analytical thinking to evaluate validity and significance of research findings.

Research: I believe that research provides the opportunity to learn what we do not know, and apply what we have learned. Progress for academia rests on the shoulders of research, as each new finding feeds into knowledge shared with peers and students. As I pursue my research interests and try to fill gaps in the literature, I often encounter students who are interested in gaining research experience and improving analytic skills in preparation for graduate study. Bright students who have the potential for great contributions to research need mentoring to learn basic skills of scientific inquiry and to practice critical thinking abilities that allow them to develop hypotheses about mechanisms underlying behavior. My work with these students lead me to believe that while courses provide volumes of knowledge, it is only by engaging in research that we can put this knowledge into action and build upon it.

Part 3: A selected list of publications, grants, and similar activities

Most Recent Posters

Pounder, Z., Jacob, J., Eardley, A., Evans, S., Loveday, C., & Silvanto, J. (2021). Exploring individual differences in neuropsychological and visuospatial working memory task performance in aphantasia. To be presented at the annual virtual Vision Sciences Society (V-VSS) meeting. May 21-26.

Pounder, Z., Jacob, J., Jacobs, C., Loveday, C., Towell, T., & Silvanto, J. (2018). Mental rotation performance in aphantasia. Annual Vision Sciences Society (VSS) meeting. St. Pete Beach, FL, May 18-23.

Grants

Serving as the Co-PI on the NSF EPSCoR RII Track-2 FEC (OIA 1632891) Award to Louisiana Tech. $6,000,000 awarded before I started at LA Tech.

Parks, D., Alderman, B.L., & Jacob, J. (2021). Identifying unique neurophysiological signatures influencing memory encoding and learning in children with Autism Spectrum Disorder. Simons Foundation Autism Research Initiative. $ 685,123

Jacob. J. (2021). Lagniappe Ladies Grant Requesting funds for the purchase of books to be lent to/provided for the use of Psychology undergraduate majors, minors, and interested students and Psychology graduate students. $3327

Part of the CBERS' Infrastructure NIH proposal (2021) titled “Expansion of biomedical research facilities to enhance BRAIN initiative collaborations in North Louisiana”. $5,152,000

Jacob. J., Mennie, K., & Thomas, D. (2020). Lagniappe Ladies Grant requesting funds to purchase research equipment necessary to collect human behavioral data. $4949.00

Co-PI on Tech’s submission to DOT’s call for “Automated Driving System Demonstration Grants”. (2019). Smart-Cart Infrastructure: Safety, Security, Implementation of ADS. $5,438,376

Stafford, T., Gates, M., & Jacob, J. (2019). “C-Accel Pilot – Track B1: Human-Artificial Intelligence Teaming in the Cybersecurity Workforce.”

Jacob. J., Mennie, K., & Thomas, D. (2019). Enhancing Human Interaction, Accessibility, and Connectivity in the College of Education. Board of Regents Departmental Enhancement. $72844

Jacob. J., Walcyzk, J., & Livingston, M. (2017). Acquisition and Implementation of EEG and Eye Tracking Technology in Cognitive Neuroscience. Board of Regents Departmental Enhancement. $126,375

Review work for journals

Scientific Reports, 2019-2021
Psychonomic Bulletin & Review, 2019-2020
Journal of Vision, 2019

Part 4: A selected list of service activities.

Note: Service addressed in Part 1 omitted from this list

- Collaborated with COE’s Gear-UP Grant to teach Introduction to Psychology to High School students in 2021.
- Volunteered to help with the LA Tech Science Olympiad Invitational in 2018.
- Volunteered at the FIRST Robotics meeting hosted by the University in 2018.