

Academic Excellence and Research Committee

December 2021

RADFORD UNIVERSITY

Board of Visitors



Board of Visitors

ACADEMIC EXCELLENCE AND RESEARCH COMMITTEE

2:30 P.M.**

DECEMBER 2, 2021

**MARY ANN JENNINGS HOVIS BOARD ROOM
THIRD FLOOR, MARTIN HALL, RADFORD, VA**

**DRAFT
AGENDA**

- **CALL TO ORDER** Dr. Thomas Brewster, *Chair*
- **APPROVAL OF AGENDA** Dr. Thomas Brewster, *Chair*
- **APPROVAL OF MINUTES** Dr. Thomas Brewster, *Chair*
 - September 9, 2021
- **ACADEMIC AFFAIRS REPORT** Dr. J. Orion Rogers, *Interim Provost and Vice President for Academic Affairs*
 - Academic Affairs Update
 - Office of the Provost Organizational Restructuring
 - Dean of the Libraries Search Concluded
 - Emeritus Faculty
 - Sense of Belonging Through Research Presentation
- **FACULTY SENATE REPORT** Dr. Katie Hilden, *President, Faculty Senate*
- **OTHER BUSINESS** Dr. Thomas Brewster, *Chair*
- **ADJOURNMENT** Dr. Thomas Brewster, *Chair*

**** All start times for committees are approximate only. Meetings may begin either before or after the listed approximate start time as committee members are ready to proceed.**

COMMITTEE MEMBERS

Dr. Thomas Brewster, Chair
Ms. Georgia Anne Snyder-Falkinham, Vice Chair
Ms. Charlene A. Curtis
Dr. Rachel D. Fowlkes
Mr. David A. Smith
Dr. Katie Hilden, Non-Voting Faculty Advisory Member

December 2021 Meeting Materials

RADFORD UNIVERSITY

Board of Visitors

Academic Research and Excellence Committee
Written Report
Dr. J. Orion Rogers, Interim Provost and Vice President for Academic Affairs
December 2, 2021

- **From the Interim Provost**

The fall 2021 semester has been very successful in Academic Affairs with the implementation of the REAL curriculum, as well as planning for developing our QEP and submission of the Compliance Certification Report.

- **Academic Leadership Fellows**

Radford University announced the first faculty appointments to the Academic Leadership Fellows (AL Fellows) program on September 3. The AL Fellows program is designed to support leadership development and continuing student support through campus-wide faculty-student engagement. AL Fellows is a collaboration between the Academic Success Center and the new REAL general education curriculum. The program is made up of seven faculty members, each representing one of the six undergraduate colleges and the School of Nursing.

The Academic Leadership Fellows and the colleges they represent are:

- Kimberly Lane, Ph.D., Artis College of Science and Technology.
- Wendy Eckenrod-Green, Ph.D., College of Education and Human Development.
- Patricia (Trish) Winter, Ph.D., College of Visual and Performing Arts.
- Aysha Bodenhamer, Ph.D., College of Humanities and Behavioral Sciences.
- Jennifer Elias, Ph.D., Davis College of Business and Economics.
- Kerry Vandergrift, Ph.D., Waldron College of Health and Human Services.
- Helen Reed, School of Nursing

- **The REAL Experience – October 4, 2021**

The Academic Success Center, the Center for Career and Talent Development and many of the university's faculty were present in Young Hall on October 4, 2021 to give students the REAL Experience, formerly the Majors and Minors Fair. Representatives from more than 45 academic programs were present to talk with students about exploring academic programs and student-engagement opportunities as well as majors and minors within Radford University's new REAL Curriculum, which launched with the 2021 fall semester. REAL also showcases the diversity of academic experiences available to Radford students. The curriculum features majors in 43 areas of study and more than 90 minors. The Real Curriculum will provide every Radford student courses of study that will ignite their passion for learning.

- **Emeritus Faculty**

Based on recommendations from the Department Personnel Committee, the Department Chair, the College Dean, and the Provost, the President has awarded emeritus status to the following retired faculty members:

Professor Reginald Shareef	Department of Political Science
Professor Paul Witkowsky	Department of English
Professor Don Secreast	Department of English
Professor Tim Poland	Department of English
Professor Carolyn Mathews	Department of English
Professor Rosemary Guruswamy	Department of English
Professor Garth Montgomery	Department of History
Professor Edward Udd	Department of Recreation, Parks and Tourism
Professor Mark Wagstaff	Department of Recreation, Parks and Tourism

- **Surgical Technology Program Transition**

The Surgical Technology Program at RUC in the Waldron College of Health and Human Services is an associate's degree program that was added to the Radford University curriculum at the time of the merger with Jefferson College of Health Sciences in July of 2019. This associate's degree program will be transitioning to Virginia Western Community College on July 13, 2022. The two faculty members currently employed in the Surgical Technology program at RUC will become faculty members at Virginia Western Community College to continue the program with a seamless transition for the students. Students who enrolled in the Surgical Technology program in August of 2020 will graduate as Radford University students, and students who enrolled in Surgical Technology in August of 2021 will graduate as Virginia Western Community College students.

- **Sense of Belonging Through Research**

Presentation from Dr. Joe Wirgua, Director of the Office of Undergraduate Research and Scholarship and students Skylar Roberson, Sam Williams, and Luc White.

**RADFORD UNIVERSITY BOARD OF VISITORS
ACADEMIC EXCELLENCE AND RESEARCH COMMITTEE
EMERITUS FACULTY**

DECEMBER 2, 2021

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Rosemary Guruswamy	Department of English
Garth Montgomery	Department of History
Edward Udd	Department of Recreation, Parks and Tourism
Mark Wagstaff	Department of Recreation, Parks and Tourism

- Criteria for the awarding of emeritus faculty status are:
 - A minimum of ten years of service to Radford University;
 - Evidence of effective teaching; and
 - Significant professional contributions.

- The privileges and responsibilities attached to emeritus status include:
 - Use of the library;
 - Use of those athletic facilities available to regular faculty;
 - Use of a university computer account;
 - A Radford University identification card and special event discounts available with it; and
 - Attendance at University functions that are open to all regular faculty

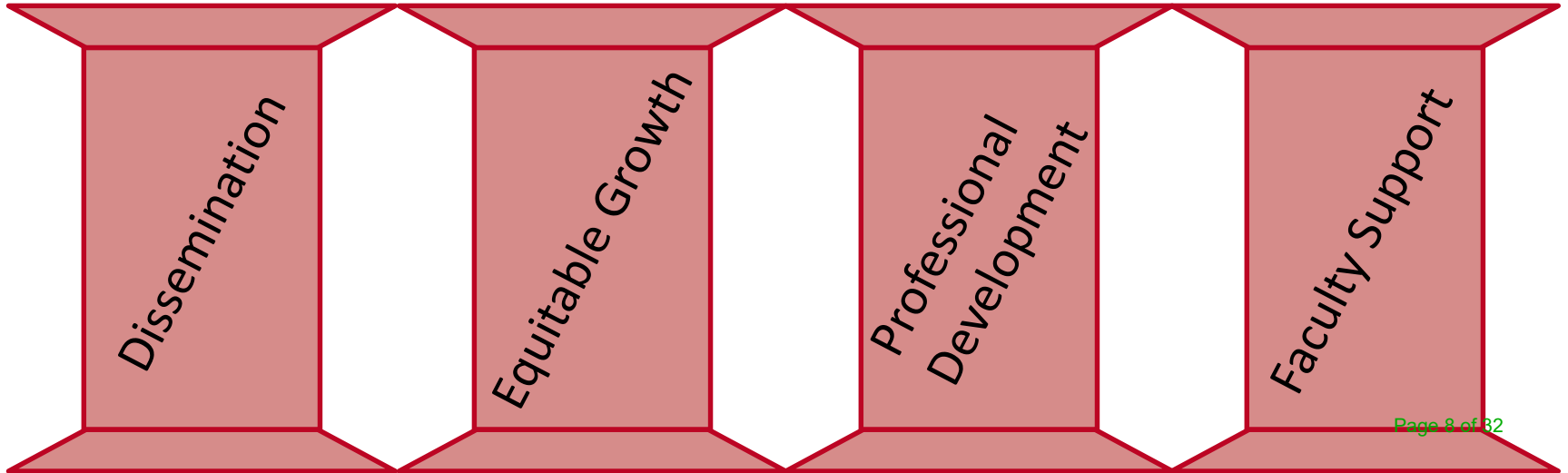
Sense of Belonging Through Research

RADFORD
UNIVERSITY

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Sense of Belonging through URSCI

The Office of Undergraduate Research and Scholarship (OURS) advances a sustainable culture of undergraduate research, scholarship and creative inquiry (URSCI).

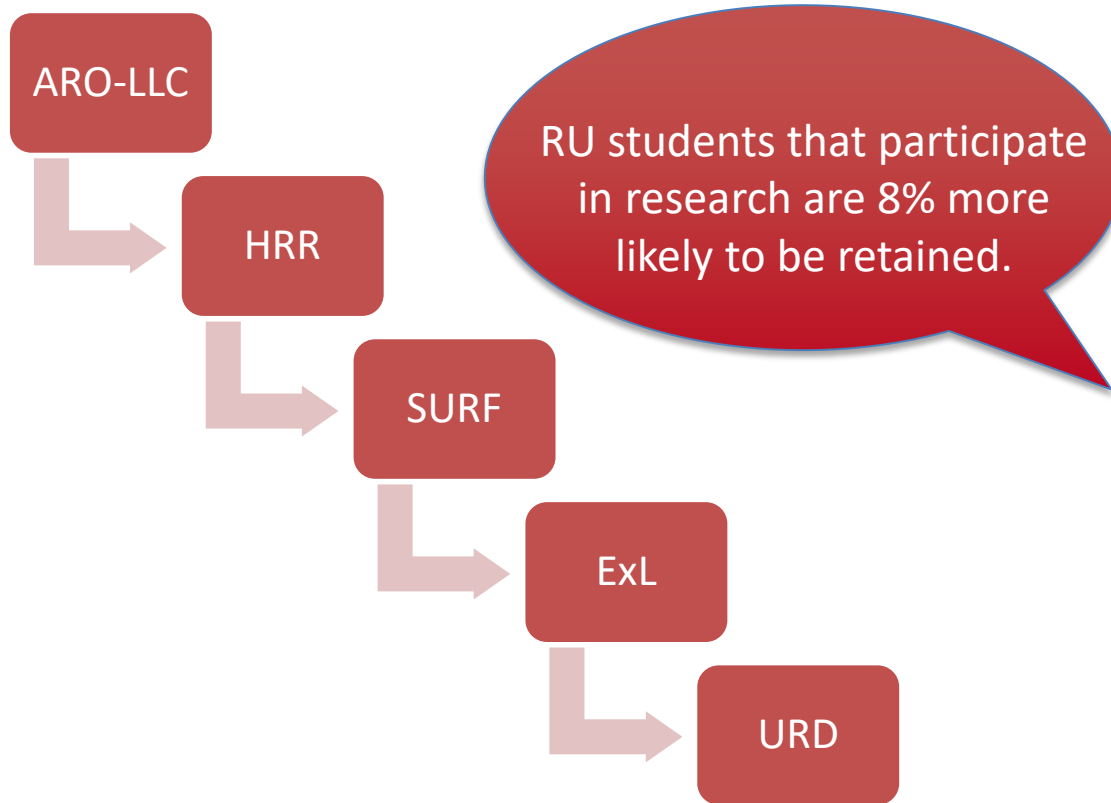


Sense of Belonging through URSCI

Research Defined: **mentored** investigation or creative inquiry that seeks to make a scholarly or artistic **contribution to knowledge.**



Sense of Belonging through URSCI



Sense of Belonging through URSCI

NACE Career Readiness Competencies



Professionalism
& Work Ethic



Communication



Critical Thinking
& Problem Solving



Team Work &
Collaboration



Digital
Technology



Leadership



Global &
Intercultural Fluency



Career
Management



93% of research rookies
said the program improved
or greatly improved their
ability to communicate
effectively.

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Sense of Belonging through Research

Infusing research into the curriculum



RU students that participate in research are over twice as likely to have leadership roles on campus.

In the 2020AY, 196 more courses offered research experiences at RU vs. the 2019AY.

Sense of Belonging through URSCI

Skylar Roberson, Class of 2022

- From deep Southwest Virginia
- Sister is an alumna
- Drawn by the community
- Applying to DPT programs
- Multiple foundation awards



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Sense of Belonging through URSCI

Accelerated
Research
Opportunities
Living-
Learning
Communities



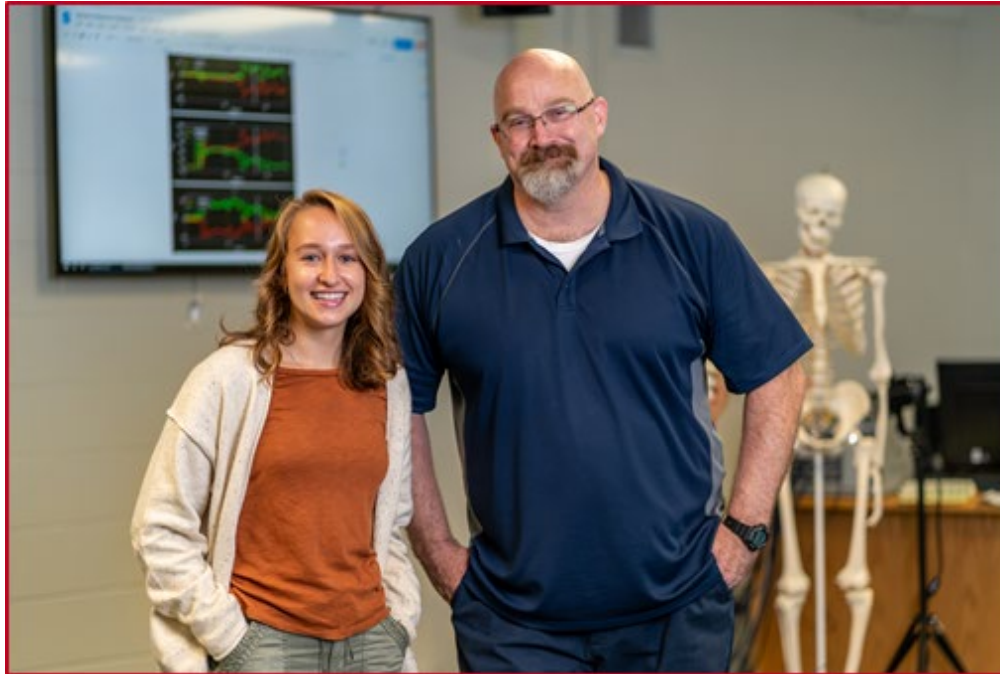
No Barre

5th position without the barre displays a side lean.

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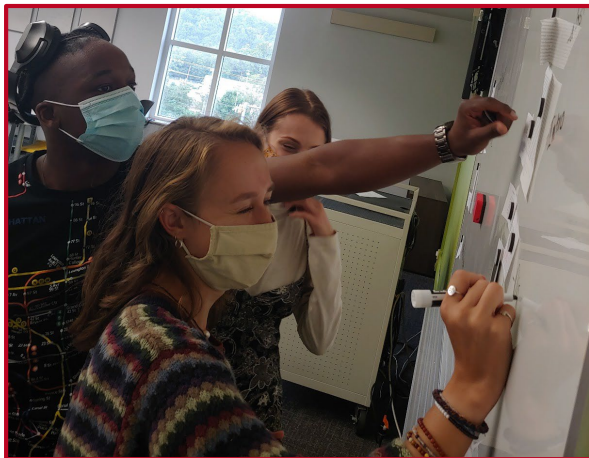
Sense of Belonging through URSCI

Ames Scholar, Highlander Research Rookie



Sense of Belonging through URSCI

OURS Executive Student Assistant
ARO-LLC Peer Mentor



Sense of Belonging through URSCI

Sam Williams, Class of 2024

- From South Carolina
- Started hacking at age 12
- Drawn by the curriculum and research
- Access to faculty in recruiting



Sense of Belonging through URSCI

Engaging in Academics



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Sense of Belonging through URSCI

Internships



RADFORD
UNIVERSITY



Sense of Belonging through URSCI

Presenting and Networking



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Sense of Belonging through URSCI

Luc White, Class of 2022

- From deep Southwest Virginia
- First-generation
- Non-binary
- Requires university support
- Foundation scholarships



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Sense of Belonging through URSCI

Research in chemistry, freshman year



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Sense of Belonging through URSCI

Highlander Research Rookies



The Macksey Journal

Volume 1

Article 129

2020

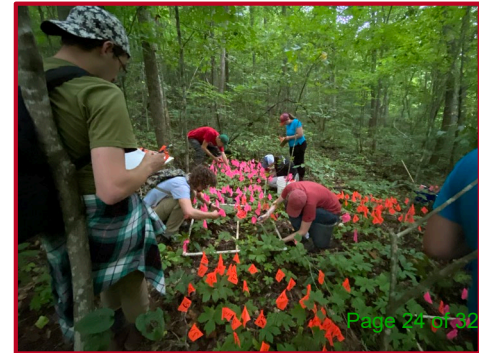
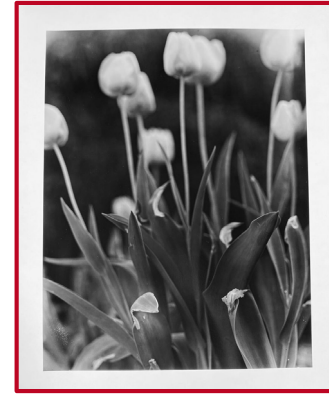
Wearable Life: Translating Medicinal Plant Properties in Jewelry

Lucas White
Radford University, lwhite91@radford.edu

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Sense of Belonging through URSCI

Breaking Down Boundaries



Sense of Belonging through URSCI

National Science Foundation - Research Experiences for Undergraduates



Unearthing Giants: Novel 3D Reconstruction of Carboniferous Lycophyte Roots from Coal Ball Material

Lucas D. White¹, Fabiany Herrera², Maya A. Bickner³, Patrick S. Herendy²
¹Radford University, Radford, VA, 24141, lwhite91@radford.edu ²Chicago Botanic Garden, Glencoe, IL, 60022

Introduction

During the Carboniferous period (~360 million years ago), giant arborescent lycophytes towered in swampy-like ecosystems and were dominant among the macroflora. How these massive plants achieved their height, up to 30 meters, has been attributed to their highly branched, root and root-like structures. Studying fossil lycophyte groves insight into the evolution of root and root-like structures and allows for further understanding of how these plants grew and reveals important steps in their evolutionary journey to the surviving lycophytes we see today (e.g., clubmosses, spikemosses, and quillworts). Much of the history of giant arborescent lycophytes is preserved in Carboniferous coal balls. Coal balls are mineralized root deposits composed of plant parts preserved in calcium carbonate. One of the most common ways to deconstruct the composition of coal balls is through the sectioning method. A major limiting factor that reconstruction scientists of fossil plants is their two-dimensional nature. The limited dimensionality of the fossils restricts what can be gathered and learned about these ancient plants. Furthermore, because coal balls form a sphere around the preserved plant matter, most plants in this material normally prevent destruction. 1) The fossil plants are inaccessible without the use of destructive methods, and even when those methods are used on the plant's anatomy is exposed, 2) the flat, two-dimensional, surface view limits the study of these fossils.

Hypothesis

Coal balls preserve plant material to a degree that allows for the study of fossilized plant material and preservation is fine enough for micro-computed x-ray tomography (μ CT) reconstruction of that plant material.

Here, we present the first three-dimensional reconstruction of lycophyte roots (i.e., stigmatalia axes) from coal ball material. The preservation potential of coal balls allows for distinguishing different layers of root tissue and even individual cells within their rooting structures. Furthermore, three-dimensional rendering of individual roots is possible in an exceptional degree, even at low-resolution scans.

Methods

The fossil material studied comes from the Phillips Coal Ball Collection at the PEI Center for Paleontology, Prairie Research Institute, University of Illinois. Carboniferous acrotile roots were prepared using standard techniques (Doo et al. 1996), using dilute hydrochloric acid. Reconstruction and cellulosic acetate peel image analysis were achieved through ImageJ. Photographs of cellulosic acetate peels were collected by using a StackShot, cellulosic acetate peels and a Leica MZ16 light microscope, and digital images were using a 6S software. Three-dimensional images, resolution of 66.63 μ m (voxels), were collected using a high-resolution tomography X-ray scanner (μ CT) by the Department of Organismal Biology and Anatomy, University of Chicago. Scans were performed with a 200 kVp voltage at a voltage of 164 kV for a full scan time of 29 minutes. The three-dimensional reconstruction was created using Avizo 10c. Restoring the three-dimensional reconstruction used MeshLab and Voxelary.com, and 3D print of reconstruction was provided by 3D Print Chicago.

Results

Fig. 1. Transparent model of 3D reconstruction
Fig. 2. Transparent detail of Root 1D, vascular bundle visible
Fig. 3. Complete 3D model of coal ball
Fig. 4. Axonite peel detail superimposed on 3D model
Fig. 5a. Axonite peel of coal ball
Fig. 5b. Detail of acetate peel, flipped
Table 1. Approximate volumes of each root from 3D model

Root Number	Volume (mm ³)
1	278.26
2	309.36
3	278.06
4	151.14
5	288.61
6	288.61
7	288.61
8	288.61
9	288.61
10	171.60

Discussion

Three-dimensional visualization of fossilized rooting systems can reveal new information about the morphology of rooting systems, as seen in the flattened branching in reconstructions. The structures rendered from this coal ball are isotaxonal, dichotomous branching, Stigmatalia "rosettes", the expected branching pattern of lycophytes. Stigmatalia "rosettes" are early rooting structures found in Carboniferous lycophytes that are similar to shoots and covered in "rosettes." "Rosettes" are believed to be modified leaves since these structures are shoot-like in that they arise axillarily, whereas true roots arise endogenously. The exact classification of rooting systems in lycophytes is still debated among researchers. Roots and root-like structures evolved before vascular plants, even in lycophytes and later in ephylliferous ferns and seed plants. This fossil supports the hypothetical model of the separate evolution of rooting systems in lycophytes and adds to the broader debate about the evolutionary rooting systems and how we might classify these morphologies.

In addition to being able to calculate the volume of a structure, other physical characteristics can now be analyzed utilizing three-dimensional reconstructions, like the movement of vascular cylinders along the Stigmatalia axes, surface details, and the three-dimensional relationship of fibers in the past. Tracking this movement along the axes and calculations of other physical aspects of these systems has implications to better comprehend how rooting systems might have sequenced and used carbon dioxide. Our understanding of how extant lycophytes interact with carbon dioxide coupled with this new ability to calculate physical traits from fossils can help inform our hypotheses about how extinct lycophytes interacted with carbon dioxide, whether for cellular respiration or carbon sequestration. This new technique is exciting and informative, but only by applying both new and old techniques can the full picture of extinct lycophytes be revealed.

References

Herrera, F. A. (2019). Evolution of plant rooting systems. *PLoS One*, 14(10), e0220700.
Herrera, F. A., Barron, C. W., & Drake, L. (2018). Niche of highly branched arborescent lycophytes in the late Paleozoic. *Proceedings of the National Academy of Sciences*, 115(22), 4607-4616.
Herrera, F. A., & Drake, L. (2017). The evolution of highly branched rooting systems. *Current Reviews in Plant Physiology*, 2(16), 551-564. <https://doi.org/10.1155/2017/1616551>
Herrera, F. A., & Drake, L. (2018). Specific and independent origin of root and shoot initiation in vascular plants. *Current Reviews in Plant Physiology*, 4(7), 119-126. <https://doi.org/10.1155/2018/47119126>
Herrera, F. A., & Drake, L. (2019). Specific and independent origin of root and shoot initiation in vascular plants. *Current Reviews in Plant Physiology*, 4(7), 119-126. <https://doi.org/10.1155/2019/47119126>
Rohlf, J. W., & Bookstein, F. L. (1990). Developmental Analysis of Morphometrics: Statistical Methods for Quantitative Morphology. *Journal of Theoretical Biology*, 167(1), 151-160.
Table 1. See Table 1 in the text.
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Acknowledgments

Funding was provided by the NSF REU grant 1801841. We thank the staff of the Phillips Coal Ball Collection at the PEI Center for Paleontology, Prairie Research Institute, University of Illinois, for their generous donation of fossil material. We also thank the staff of the Phillips Coal Ball Collection at the PEI Center for Paleontology, Prairie Research Institute, University of Illinois, for their generous donation of fossil material. We also thank the staff of the Phillips Coal Ball Collection at the PEI Center for Paleontology, Prairie Research Institute, University of Illinois, for their generous donation of fossil material. We also thank the staff of the Phillips Coal Ball Collection at the PEI Center for Paleontology, Prairie Research Institute, University of Illinois, for their generous donation of fossil material.

Sense of Belonging through URSCI

Social Belonging

Campus Belonging

Academic Belonging



Minutes

RADFORD UNIVERSITY

Board of Visitors

RADFORD UNIVERSITY

Board of Visitors

ACADEMIC EXCELLENCE AND RESEARCH COMMITTEE

2:30 P.M.

SEPTEMBER 9, 2021

**MARY ANN JENNINGS HOVIS MEMORIAL BOARD ROOM
MARTIN HALL, THIRD FLOOR, RADFORD, VA**

DRAFT MINUTES

COMMITTEE MEMBERS PRESENT

Dr. Thomas Brewster, Chair
Ms. Charlene A. Curtis
Dr. Rachel D. Fowlkes
Mr. David Smith
Dr. Katie Hilden, Non-voting Faculty Advisory Member

COMMITTEE MEMBERS ABSENT

Ms. Georgia Anne Snyder-Falkinham, Vice Chair

OTHER BOARD MEMBERS PRESENT

Mr. Robert Archer, Rector
Dr. Susan Whealler Johnston
Dr. Jay Brown, Vice Rector

OTHERS PRESENT

Dr. Carolyn R. Lepre, Interim President
Ms. Karen Castele, Secretary to the Board of Visitors and Special Assistant to the President
Dr. Angela Joyner, Interim Chief of Staff, Office of the President
Dr. J. Orion Rogers, Interim Provost and Vice President for Academic Affairs
Ms. Deb Love, Senior Assistant Attorney General, Education Section Chief

CALL TO ORDER

Dr. Thomas Brewster, Chair, formally called the meeting to order at 2:30 p.m. in the Mary Ann Jennings Hovis Memorial Board Room in Martin Hall.

APPROVAL OF AGENDA

Dr. Brewster asked for a motion to approve the September 9, 2021 meeting agenda for the Academic Excellence and Research Committee, as published. Ms. Charlene A. Curtis so moved, Mr. David Smith seconded, and the motion carried unanimously.

APPROVAL OF MINUTES

Dr. Brewster asked for a motion to approve the minutes of the April 22, 2021 meeting of the Academic Excellence and Research Committee, as published. Dr. Rachel D. Fowlkes so moved, Mr. David Smith seconded, and the motion carried unanimously.

ACADEMIC AFFAIRS REPORT

Interim Provost and Vice President for Academic Affairs J. Orion Rogers began his report by sharing that Radford University was selected as one of 66 institutions across the nation to participate in a new Association of American Colleges and Universities (AAC&U) Institute on Open Educational Resources (OER), that began as a virtual kickoff on July 26-27, 2021 and will conclude with a capstone closing event on July 25-27, 2022. Open educational resources (OER) are educational materials that are free for faculty and students to use, revise and share, and they range from single lessons to textbooks.

Interim Provost Rogers stated that Fall 2021 will commence the process for Radford University to seek reaffirmation from the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) through the decennial comprehensive review. The Compliance Certification Report is due to SASCOC by September 2022, and the Off-site Review is conducted in November 2022. In early spring of 2023, the Focused Report is due, and the Quality Enhancement Plan (QEP) is due in spring 2023. The onsite review will be conducted from March 27-30, 2023, the response to the Visiting Committee Report is due five months following the onsite review, and review by the SACSCOC Board of Trustees occurs in December of 2023. As part of the reaffirmation plan the Quality Enhancement Plan has been selected. The topic selected by the QEP Topic Identification Committee is Diversity, Equity, and Inclusion.

Interim Provost Rogers shared information about new chairs and directors, including Dr. Chapman Rackaway, who serves as the new Chair of the Department of Political Science. Dr. Rackaway comes to Radford from the University of West Georgia, where he served as the chair and professor in the Department of Political Science. Dr. Jennifer Walton is welcomed as the new Director of the School of Communication. Dr. Walton comes to Radford from Ohio Northern University, where she served as the chair in Communication and Media Studies and Professor in Communication Studies. Dr. Kevin Chui will be welcomed in November as the new Chair of the Department of Physical Therapy at Radford University Carilion. Dr. Chui comes to Radford from Pacific University, where he served as the Associate Dean of Faculty Affairs in the College of Health Professions.

Several interim placements were shared by Interim Provost Rogers including, Dr. Art Carter is the Interim Dean of the Artis College of Science and Technology, Dr. Jake Fox is the Interim Associate Dean of the Artis College of Science and Technology, Dr. Jerry Kopf is the Interim Chair of the Department of Management, Dr. Wil Stanton is the Interim Chair of the Department of Marketing, Dr. Jeff Pittges is the Interim Director of the School of Computing and Information Sciences and Dr. Shala Cunningham is the Interim Chair of the Department of Physical Therapy until Dr. Chui's arrival in November.

Interim Provost Rogers stated that Radford University welcomed 42 new faculty for the Fall 2021 semester, of which 22 are new to Radford. These faculty represent disciplines from all six colleges and the School of Nursing

Interim Provost Rogers stated that based on recommendations from the Department Personnel Committee, the Department Chair, the College Dean, and the Provost, the President has awarded emeritus status to the following faculty members effective upon their retirement, including Professor Glen Martin from the Department of Philosophy and Religious Studies; Professor Kay Jordan from the Department of Philosophy and Religious Studies; Professor Iain Clelland from the Department of Management; and Professor Grigory Ioffe from the Department of Geospatial Sciences.

Interim Provost Rogers presented an overview of the summer 2021 outreach programs, which develop the sense of campus community belonging in prospective students and were offered in the Artis College of Science and Technology, the College of Humanities and Behavioral Sciences, the College of Visual and Performing Arts and the Waldron College of Health and Human Services, and include:

Summer Bridge Women in STEM and Summer Bridge Cyber Camp - Women in STEM is a week-long residential experience for rising sophomore, junior, and senior high school girls interested in science, technology, and mathematics. CYBER CAMP is an interactive experience for students with a Capture the Flag Competition, MicroBit programming and more.

Governor's School - The Governor's School for Colleges of Visual and Performing Arts and Humanities and Behavioral Sciences works to enhance the individual college experience as students grow and learn. The College of Visual and Performing Arts hosted 150 students and the College of Humanities and Behavioral Sciences hosted 100 students.

International Summer Dance Intensive (ISDI) is a classically based program ideal for serious and dedicated ballet students age 12 and older who have had a minimum of two years of ballet training and at least one year of pointe training for girls, and is hosted by the Department of Dance. Since 2007, there have been 290 in attendance, 96 were Japanese students and 54 students became Radford University dance majors.

RUC Summer Camps by the Master of Occupational Therapy provides opportunities for children ages 3-5 and 6-14 and offers the chance for campers to build their cognitive, physical/motor, sensory and social skills while their graduate student hosts gain real-world clinical experience.

Interim Provost Rogers shared that the Honors College develops social belonging, academic belonging and campus-community belonging to our currently enrolled students. Dr. Niels Christensen serves as Director of the Honors College, which total and first-year honors enrollment are the highest since 2015-16. Students enrolled through the Honors College have a 92% retention rate.

Interim Provost Rogers shared information on REALising Inclusive Science Excellence in Biology, Chemistry, and Physics at Radford University, which is funded by a five-year, \$1M grant from the Howard Hughes Medical Institute. REALISE aims to change faculty and student mindset through developing and implementing engaging and inclusive pedagogies.

In closing, Interim Provost Rogers shared the goals of the Quality Enhancement Plan, which are: increase students' sense of belonging in classrooms; increase students' sense of belonging in residence halls; increase students' self-efficacy and academic confidence; and increase student retention, progression, and graduation rates.

ADJOURNMENT

With no further business to come before the Committee, Dr. Brewster adjourned the meeting at 3:35 p.m.

Respectfully submitted,

Vickie Stewart Taylor
Executive Assistant to the Provost

End of Board of Visitors Materials

