**NAME:** \_\_\_\_Nicholas James Tustison\_\_\_\_\_\_

**Purpose:** The Annual Faculty Review is used as an opportunity to celebrate faculty successes, develop mechanisms for continued success, and provide guidance and feedback for professional advancement. *Please understand that the more accurate the information you provide the more productive and meaningful your review will be.* Thank you for your thoughtful reporting efforts.

1. ***CURRICULUM VITAE***

**Please submit an updated CV, following the School of Medicine P&T formatting, when you submit this report.**

**Reference website:** [**http://www.medicine.virginia.edu/administration/faculty/faculty-dev/pandt**](http://www.medicine.virginia.edu/administration/faculty/faculty-dev/pandt)

1. ***ADMINISTRATIVE ACTIVITIES***
2. **ADMINISTRATIVE ACTIVITIES**
   1. **Administrative Appointments/Roles (% effort for each role)**

**Division**

**Department**

**School of Medicine**

**Health System**

**University**

**Other**

* 1. **Administrative Projects & Accomplishments**

(Include title and date and brief descriptive narrative)

* 1. **\_\_\_0\_\_\_\_ Number of staff supervised**
  2. **\_\_\_0\_\_\_\_ Number of faculty supervised**

1. **PROFESSIONAL SERVICE: COMMITTEES (INCLUDING SCIENTIFIC & TEACHING), COUNCILS, SPECIALTY SOCIETIES AND ORGANIZATIONS**
   1. **Scientific Program Committees**

**(ie. RSNA; Include your role & note any committees you chair**)

SPIE Medical Imaging: Biomedical Applications program committee

* 1. **NIH Study Sections**

(**Include your role & note any committees you chair**)

* 1. **International/Society/Council/Legislative/Organization**

(**Include your role & note any committees you chair**)

Insight Software Consortium (secretary)

* 1. **National/Society/Council/Legislative/Organization**

(**Include your role & note any committees you chair**)

1. **State/Society/Council/Legislative Organization**

(**Include your role & note any committees you chair**)

1. **Local-Regional/Society/Council/Legislative/Organization**

(**Include your role & note any committees you chair**)

1. **School of Medicine/Health System/UPG/University**

(**Include your role & note any committees you chair**)

1. **Department/Division-Level Committees**

*Note: Be sure to include education committees in this section.*

(**Include your role & note any committees you chair**)

1. ***SCHOLARLY ACTIVITIES***
2. **BIBLIOGRAPHY**

**PEER-REVIEWED**

* 1. **Peer-Reviewed Papers/Publications between April 1, 2017 – March 31, 2018**

**and Impact Factor**

(Note: Do not include manuscripts that are in press, accepted, or submitted.)

E. Mortani Barbosa Jr., H. Shou, S. Simpson, J. Gee, **N. Tustison**, and J.C. Lee, Quantitative CT metrics from the transplanted lung can predict FEV1 after lung transplantation, Journal of Thoracic Imaging, 33(2):112-123.

Maurizio Cereda, Yi Xin, Hooman Hamedani, Giacomo Bellani, Stephen Kadlecek, Justin Clapp, Luca Guerra, Natalie Meeder, Jennia Rajaei, **Nicholas J. Tustison**, James C. Gee Brian P. Kavanagh, and Rahim R. Rizi. Tidal Changes on CT and Progression of ARDS, Thorax, 72(11):981-989, Nov 2017.

E. Mortani Barbosa Jr., S. Simpson, J.C. Lee, **N. Tustison**, J. Gee, and H. Shou, Multivariate modeling using quantitative CT metrics may improve accuracy of diagnosis of bronchiolitis obliterans syndrome after lung transplantation, Computers in Biology and Medicine, 89:275-281, Oct 2017.

A. Murat Maga, **Nicholas J. Tustison**, and Brian B. Avants. A population level atlas of Mus musculus craniofacial skeleton and automated image based shape analysis, Journal of Anatomy, 231(3):433-443, Sep 2017.

Beau Pontré, Brett R. Cowan, Edward DiBella, Sancgeetha Kulaseharan, Devavrat Likhite, Nils Noorman, Lennart Tautz, **Nicholas Tustison**, Gert Wollny, Alistair A. Young, and Avan Suinesiaputra. An Open Benchmark Challenge for Motion Correction of Myocardial Perfusion MRI, IEEE Journal of Biomedical and Health Informatics, 21(5):1315-1326, Sep 2017.

Amy C. Ladd, David G. Browhan, Ravindar R. Thomas, Paula M. Keeney, Stuart B. Berr, Shaharyar M. Khan, Francisco R. Portell, Meiram Z. Shakenov, Patrick F. Antkowiak, Bijoy Kundu, **Nicholas J. Tustison**, James P. Bennett, Jr. RNA-seq Analyses Reveal that Cervical Spinal Cords and Anterior Motor Neurons from Amyotrophic Lateral Sclerosis Subjects Show Reduced Expression of Mitochondrial DNA-Encoded Respiratory Genes, and rhTFAM May Correct This Respiratory Deficiency, Brain Research 1667:74-83, Jul 2017.

* 1. **Peer-Reviewed Papers/Publications that are in press or accepted**

**between April 1, 2017 – March 31, 2018** (Please differentiate)

Zachariah M. Reagh, Jessica A. Noche, **Nicholas J. Tustison**, Derek Delisle, Elizabeth A. Murray, and Michael A. Yassa. Functional Imbalance of Anterolateral Entorhinal Cortex and Hippocampal Dentate/CA3 Underlies Age-Related Object Pattern Separation Deficits, Neuron. (in press)

Yi Xin, Maurizio Cereda, Hooman Hamedani, Mehrdad Pourfathi, Sarmad Siddiqui, Natalie Meeder, Stephen Kadlacek, Ian Duncan, Harrilla Profka, Jennia Rajaei, **Nicholas Tustison**, James Gee, Brian Kavanagh, and Rahim Rizi. Unstable Inflation Causing Injury: Insight from Prone Position and Paired CT Scans, American Journal of Respiratory and Critical Care Medicine. (accepted)

Sandhitsu Das, Long Xie, Laura Wisse, Ranjit Ittyerah, **Nicholas Tustison**, Bradford Dickerson, Paul Yushkevich, and David Wolk. Longitudinal and cross-sectional structural MRI correlates of AV-1451 uptake, Neurobiology of Aging.  (accepted)

* 1. **Peer-Reviewed Papers/Publications that have been submitted**

**between April 1, 2017 – March 31, 2018**

**Nicholas J. Tustison**, Andrew J. Holbrook, Brian B. Avants, Jared M. Roberts, Philip A. Cook, Zachariah M. Reagh, James R. Stone, Daniel L. Gillen, Michael A. Yassa, [The ANTs Longitudinal Cortical Thickness Pipeline](https://www.biorxiv.org/content/early/2017/07/30/170209), *Neuroimage*.

**NON PEER-REVIEWED**

1. **Non-Peer Reviewed Papers/Publications – published between April 1, 2017 – March 31, 2018**
2. **Non Peer-Reviewed Papers/Publications – in press or accepted between April 1, 2017 – March 31, 2018** (Please differentiate)
3. **Non Peer-Reviewed Papers/Publications – submitted between April 1, 2017 – March 31, 2018**

**BOOKS/BOOK CHAPTERS**

(Identify invited chapters)

1. **Book chapters published between April 1, 2017 – March 31, 2018**
2. **Books published between April 1, 2017 – March 31, 2018**

**SHORT COMMUNICATIONS, EDITORIALS OR COMMENTARIES**

1. **Published between April 1, 2017 – March 31, 2018**
2. **In press or accepted between April 1, 2017 – March 31, 2018** (Please differentiate)
3. **Submitted between April 1, 2017 – March 31, 2018**

**PEER-REVIEWED SCIENTIFIC PRESENTATIONS OR PUBLISHED ABSTRACTS**

1. **Peer-reviewed posters or electronic presentations/abstracts between**

**April 1, 2017 – March 31, 2018 (i.e. RSNA, AUR)**

(Titles and co-authors)

1. **Published scientific presentations/abstracts between April 1, 2017 – March 31, 2018**

**OTHER**

1. **Health Ed./Videos, etc.**
2. **EDITORIAL ACTIVITIES**
3. **Journal Editorships/Associate Editorships**
4. **Journal Guest Editorships**
5. **Journal Editorial Board Service**
6. **Book/Manuscript Reviews, and for which journals**

Journal of Medical Imaging

Neuroimage

Magnetic Resonance in Medicine

Psychiatric Research: Neuroimaging

1. **RESEARCH ACTIVITIES**
   1. **Grants**
      1. **Active grants for which you are Principal Investigator, Co-Principal Investigator or site PI**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Title** | **Agency (NIH, State, Foundation, Internal, Industry)** | **Your**  **Percent effort** | **UVa Direct Costs** | **UVa Total Costs** | **If industry, percent of total recruitment achieved** | **Expected end date** |
| R01 HL133889-01A1, ITK-Lung: A Software Framework for Lung Image Processing and Analysis | **NIH** | **50%** |  |  |  | **6/30/2021** |
|  |  |  |  |  |  |  |

* + 1. **Active grants for which you are a Co-Investigator**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title of Proposal** | **Agency (NIH, State, Foundation, Internal, Industry)** | **PI** | **Your**  **Percent effort** | **Expected end date** |
|  |  |  |  |  |
|  |  |  |  |  |

* + 1. **Grants submitted (list as PI, co-PI, site PI, or co-I) between April 1, 2017 – March 31, 2018**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Proposal Title** | **Agency (NIH, State, Foundation,**  **Internal, Industry)** | **Submission Date** | **Approximate Date of Review** | **Result of Review (Funded, Pending funding, Not funded, Pending review** | **NIH only**  **Priority Score/ %percentile, or date of review** | **UVa Direct Costs** | **Your % Effort** |
|  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |  |

* 1. **Unfunded Research Efforts (Active)**
* Collaboration with Sohil Patel and Prem Batchala (submitted grants)
* Collaboration with Weibin Shi (submitted grant)
* Collaboration with Jaime Mata (submitted grant)
* Collaboration with Kun Qing
  1. **Cross-Grounds Collaboration (grants, papers, or other collaborations with faculty from other departments or UVA schools)**

(Title, dates, % effort, direct costs {current year}, indirect costs {current year}); name of funding organization or publication)

1. **New Research Programs or Expansion of Current Research Programs**
2. **Research Operations Enhancements**
3. **\_\_\_0\_\_\_\_\_# of Patients Involved in Clinical Trials**
4. **\_\_\_0\_\_\_\_\_# of Investigator Initiated Clinical Trials**
5. **\_\_\_0\_\_\_\_\_# of Awarded Patents**
6. **\_\_\_0\_\_\_\_\_# of Submitted Patent Applications**
7. **\_\_\_0\_\_\_\_\_# of Disclosed Inventions**
8. **VISITING PROFESSORSHIPS & INVITED ROLES: LECTURES, VISITING PROFESSORSHIPS, WORKSHOPS & OTHER PROFESSIONAL MEETING ROLES**
   1. **Invited Lectures between April 1, 2017 – March 31, 2018**

(Please include both internal and external lectures and list specific talk titles and organization)

* 1. **Visiting Professorships between April 1, 2017 – March 31, 2018**

2018-present:  Visiting Associate Researcher, *Department of Neurobiology and Behavior*, University of California, Irvine, Irvine, CA.

2016-2018:  Visiting Assistant Researcher, *Department of Neurobiology and Behavior*, University of California, Irvine, Irvine, CA.

* 1. **Workshop/Session Presenter/Moderator/Panelist between April 1, 2017 – March 31, 2018**

1. **OTHER FACTORS WHICH YOU FEEL SHOULD BE CONSIDERED**

(IE. Research equipment, consignments, undergraduate education, etc.)

December 2017: NVIDIA academic GPU grant (Titan Xp)

1. ***CLINICAL ACTIVITIES***
2. **CLINICAL SERVICES FOR WHICH YOU ARE RESPONSIBLE (April 1, 2017 – March 31, 2018)**

(Include description and % clinical effort)

1. **PATIENT CARE & CLINICAL PRODUCTIVITY (April 1, 2017 – March 31, 2018)**
   1. **Work RVUs vs. AAARAD Benchmarks (%)**
   2. **Outpatient Clinic Visits**
2. **CLINICAL/OPERATIONAL ENHANCEMENTS (April 1, 2017 – March 31, 2018)**
   1. **New Clinical Programs**
   2. **Clinical Program/Service Expansion**
   3. **Operational Enhancements**
3. **CALL COVERAGE (April 1, 2017 – March 31, 2018)**
4. **\_\_\_\_\_\_ Total # of Weeknights (Monday-Thursday)**
5. **\_\_\_\_\_\_ Total # of Weekends (Friday-Sunday)**
6. **Holidays** (Source: UVA Health System calendar of clinic holiday schedule)

\_\_\_\_\_\_\_ New Year’s Day

\_\_\_\_\_\_\_ Memorial Day

\_\_\_\_\_\_\_ Independence Day

\_\_\_\_\_\_\_ Labor Day

\_\_\_\_\_\_\_ Thanksgiving Day

\_\_\_\_\_\_\_ Day after Thanksgiving

\_\_\_\_\_\_\_ Christmas Day

\_\_\_\_\_\_\_ **Total # of holidays covered**

1. **MULTIDISCIPLINARY CLINICAL ROUNDS (eg. PICU)**

(List name and frequency)

1. **CLINICAL QUALITY INITIATIVES**
   1. **Please describe your Quality Improvement (QI) project for FY18. Then, describe what QI projects you plan to do for FY19.**
   2. **Other quality projects/initiatives**
2. ***TEACHING AND EDUCATIONAL ACTIVITIES***

Include Basic Science, Practice of Medicine, Clerkship, Physical Diagnosis/Tutorials; describe any new programs to which you have contributed.

1. **CLASSROOM, DIDACTIC LECTURE, SEMINAR, OR TEACHING LABORATORY:**

**April 1, 2017 – March 31, 2018**

* 1. **MEDICAL STUDENTS AND/OR BASIC SCIENCE**

(Indicate new/repeated, lecture title/topic/course number, prep time in hours, duration)

* 1. **RESIDENTS/FELLOWS**

(Indicate new/repeated, lecture title/topic/course number, prep time in hours, duration)

* 1. **OTHER LECTURES**

(Technologists, nurses, multidisciplinary, industry, insurance companies, etc.

Indicate new/repeated, lecture title/topic/course number, prep time in hours, duration)

1. **CLINICAL TEACHING (On ward, in clinic, or in procedure room)**

**April 1, 2017 – March 31, 2018**

(Indicate which location, audience type and description)

1. **CLINICAL & CASE CONFERENCES, GRAND ROUNDS, JOURNAL CLUBS, MULTIDISCIPLINARY TUMOR BOARDS: April 1, 2017 – March 31, 2018**

(Indicate type, title/topic, prep time in hours, duration)

1. **FORMAL STUDY TO IMPROVE TEACHING ABILITIES: April 1, 2017 – March 31, 2018**

(Indicate activity type, title/name, duration)

1. **CURRENT RESEARCH CONCERNING TEACHING: April 1, 2017 – March 31, 2018**
2. **NEW EDUCATIONAL INITIATIVES DEVELOPED: April 1, 2017 – March 31, 2018**
3. **GRADUATE STUDENT CONTACT HOURS: April 1, 2017 – March 31, 2018**

(Mentorships, dissertation committees, etc.)

1. **MENTORING: April 1, 2017 – March 31, 2018**

(Describe projects)

1. **\_\_\_0\_\_\_\_# of Pre-doctoral students mentored (lecture titles)**
2. **\_\_\_0\_\_\_\_# of Doctoral/Post-doctoral Research students mentored (lecture titles)**
3. **\_\_\_0\_\_\_\_\_# of Post-doctoral Fellows on training grants**
4. **\_\_\_0\_\_\_\_\_# of Post-doctoral Fellows on funded fellowships**
5. **\_\_\_0\_\_\_\_\_# of Post-doctoral Fellows on department funds**
6. **\_\_\_0\_\_\_\_# of Post-doctoral Fellows in School of Medicine for more than 3 years**
7. **\_\_\_0\_\_\_\_ Total # of Post-doctoral Fellows**
8. **\_\_\_0\_\_\_\_# of MSTP (Medical Scientist Training Program) Students (list projects)**
9. **OTHER EDUCATIONAL CONTRIBUTIONS/SERVICE NOT INCLUDED ABOVE**

December 2017--present:  Co-mentoring, with collaborator Weibin Shi, Andrew Grainger deep learning visceral fat segmentation project.

January 2018--present:  Co-mentoring, with collaborator Kun Qing, Zixuan Lin deep learning lung segmentation project.

1. ***RECOGNITION, HONORS, AWARDS & ENDOWED PROFESSORSHIPS***

*Include major and internal – i.e. positive comments and compliments from patients, staff, referring physicians, etc.*

**April 1, 2017 – March 31, 2018**

1. **NATIONAL/INTERNATIONAL HONORS/AWARDS/RECOGNITION**
2. **INSTITUTIONAL HONORS/AWARDS/RECOGNITION**
3. **DEPARTMENTAL HONORS/AWARDS/RECOGNITION**
4. **ENDOWED PROFESSORSHIPS**
5. **INTERNAL RECOGNITION**

(i.e. letters of recognition from patients, referring physicians, etc.)

1. ***LEAVE TIME AWAY FROM THE DEPARTMENT***

1. **\_\_\_\_\_\_\_ Total number of academic days assigned**
2. **\_\_\_\_\_\_\_ Number of meeting/professional development days used**
3. **\_\_\_\_\_\_\_ Number of vacation days used**
4. **\_\_\_\_\_\_\_ Number of maternity/paternity leave days used**
5. **\_\_\_\_\_\_\_ Number of sick days used**

**\_\_\_\_\_\_\_ TOTAL NUMBER OF DAYS AWAY FROM THE DEPARTMENT**

1. ***PROFESSIONAL DEVELOPMENT, PROFESSIONAL ACTIVITIES, AND***

***CAREER ACHIEVEMENT GOALS***

1. **\_\_\_\_\_\_\_ Number of CME credits earned during this annual period**

**(April 1, 2017-March 31, 2018)**

(Requirement: Please attach a detailed list of your CME credits to this document to include: course

name, date, and # of CMEs. Specific lecture titles are NOT required.)

Please contact Gus Hansborough for assistance.

1. **PARTICIPATION IN PROFESSIONAL DEVELOPMENT PROGRAMS**

(eg. Leadership in Academic Matters [LAM], Promotion & Tenure Sessions, listed department development or institutional lecture)

1. **PROFESSIONAL SERVICE ACTIVITIES & CONTRIBUTIONS NOT INCLUDED ELSEWHERE**

(ie. Miscellaneous activities that have enhanced your professional development or the growth, improvement and/or visibility of the department, such as volunteer work at the Free Clinic, Day of Caring, community service, diversity initiatives, Albemarle Medical Society, Radiology interest groups, etc. Be sure to list titles, duration and frequency.)

1. **BUSINESS DEVELOPMENT**

(Include purpose, description, new revenues, ROI)

1. **ACHIEVEMENTS AND GOALS**
   1. **Briefly describe what you consider your major achievements this year:**

* ANTsRNet---an open-source repository of popular deep learning architectures.
* NVIDIA development grant for a new Titan XP GPU.
* Co-PI on lung software development NIH R01 grant.
* Deep learning grant with James Stone and the navy/Cohen Biosciences.
  1. **Goals: List at least three professional/academic goals for the coming year:**

**Goal 1:** Publish the ANTs longitudinal cortical thickness paper.

**Goal 2:**  Publish 1-2 papers on deep learning collaborations.

**Goal 3:** Develop 4-5 additional deep learning architectures.

* 1. **Describe your 3-5 year goals, and describe what steps you will take this year towards achieving these goals:**

I will work towards full professorship. In addition to the publications above, steps will include working closely with collaborators for research and potentially mentoring of students.

* 1. **How can the department help you succeed in achieving the goals you described in items 2 & 3 above?**

The current support provided and, in particular, the ability to telecommute is sufficient.

* 1. **Additional comments:**

1. ***COMMENTS FROM THE CHAIR***
2. ***ACKNOWLEDGMENT***

Your signature indicates your acknowledgement of having discussed your annual review and teaching evaluations with the Department Chair.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature: Faculty Member Date of Review

***(Leave blank until your meeting)***

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Signature: Department Chair Date of Review