

## BIOGRAPHICAL SKETCH

|                       |                       |                |                                |
|-----------------------|-----------------------|----------------|--------------------------------|
| NAME                  | DAN TEODOR SIMIONESCU | POSITION TITLE | PROFESSOR OF<br>BIOENGINEERING |
| eRA COMMONS USER NAME | SIMIONESCU            |                |                                |

### EDUCATION/TRAINING

| INSTITUTION AND LOCATION                       | DEGREE            | YEAR(s)    | FIELD OF STUDY        |
|------------------------------------------------|-------------------|------------|-----------------------|
| University of Bucharest, Bucharest, Romania    | BS                | 1981       | Biology/ Biochemistry |
| University of Pennsylvania, Philadelphia, PA,  | Pre-doc Fellow    | 1988, 1991 | Biochemistry          |
| Institute for Cell Biology, Bucharest, Romania | PhD               | 1999       | Biology/Cell Biology  |
| Clemson University, Clemson, SC, USA           | Post-Doc          | 2001       | Bioengineering        |
| Clemson University, Clemson, SC, USA           | Res. Assist. Prof | 2002       | Bioengineering        |
| Clemson University, Clemson, SC, USA           | Assist. Professor | 2006       | Bioengineering        |
| Clemson University, Clemson, SC, USA           | Associate Prof.   | 2011       | Bioengineering        |
| Clemson University, Clemson, SC, USA           | Professor         | 2016       | Bioengineering        |

### A. Personal Statement

My focus and commitments are towards translational regenerative medicine and novel treatments for degenerative diseases of the cardiovascular, orthopedic and nervous systems. This includes development and preclinical testing of stem cell-based tissue engineered grafts in purpose-designed bioreactors, small and large animal models and cell therapy. Targeted clinical applications include heart valve pathology, vascular diseases, intervertebral disc degeneration and stroke. I direct a very strong suite of laboratories which cover basic science and stem cell biology, scaffold development and testing, biomechanics and bioreactors and translational regenerative medicine. I am an inventor of several technologies, some of them patented and licensed, targeting treatment of arterial aneurysms, valve diseases and seeding of stem cells. I have been a productive NIH-funded scientist and Project Manager for more than 15 years and have mentored numerous teams within national and international multidisciplinary and translational projects.

### B. Positions and Honors

#### Professional Positions

|                     |                                                                                                                                      |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <u>1981-1998</u>    | Research Scientist, Cardiovascular Res., Medical Res. Center, Targu-Mures, Romania                                                   |
| <u>1998-2000</u>    | Principal Research Investigator and Scientific Director, Mures Heart Center, Romania                                                 |
| <u>2000-2001</u>    | Project Manager, R&D, Biomedical Design Inc, Marietta, GA, USA.                                                                      |
| <u>2001-2002</u>    | Post-doctoral fellow Department of Bioengineering, Clemson University, Clemson, SC                                                   |
| <u>2002-2006</u>    | Research Assistant Professor, Department of Bioengineering, Clemson University                                                       |
| <u>2005-present</u> | Adjunct Faculty, Medical University of South Carolina, Charleston, SC                                                                |
| <u>2006-present</u> | Adjunct Professor of Surgery, University of Medicine and Pharmacy, Tg-Mures, Romania                                                 |
| <u>2006-2011</u>    | Assistant Professor of Bioengineering, Department of Bioengineering, Clemson University                                              |
| <u>2011-2016</u>    | Associate Professor of Bioengineering, Department of Bioengineering, Clemson University                                              |
| <u>2006-present</u> | <b>Director</b> , Biocompatibility and Tissue Regeneration Laboratory, Clemson University                                            |
| <u>2010-2018</u>    | <b>Director</b> , Regenerative Medicine Laboratory, Patewood/Greenville Hospital System                                              |
| <u>2012-present</u> | <b>Director</b> , Tissue Engineering and Regenerative Medicine Laboratory, University of Medicine and Pharmacy, Targu-Mures, Romania |
| <u>2012-present</u> | <b>Board Member</b> , Doctoral Council, University of Medicine, Targu-Mures, Romania                                                 |
| <u>2013-present</u> | <b>Elected fellow</b> of the American Institute for Medical and Biological Engineering (AIMBE)                                       |
| <u>2013-2018</u>    | <b>Deputy Director</b> for Clinical Research Programs and Operations, Greenville Hospital                                            |
| <u>2014-2018</u>    | <b>Director</b> , the “Cell, Tissue and Molecular Analysis Core”, NIH SCBioCRAFT <b>COBRE</b>                                        |
| <u>2015-present</u> | Harriet and Jerry Dempsey <b>Associate Professorship</b> in Bioengineering                                                           |
| <u>2016-present</u> | Harriet and Jerry Dempsey <b>Endowed Professor</b> of Bioengineering, Department of Bioengineering, Clemson University               |
| <u>2017</u>         | <b>Doctor Honoris Causa</b> title awarded by the University of Medicine and Pharmacy, Tirgu-Mures, Romania                           |
| <u>2019-2024</u>    | <b>Director</b> , the “Clemson Translational Research and Imaging Core”, NIH SCBioCRAFT <b>COBRE</b>                                 |

## Awards and Other Professional Activities

### Awards

- Romanian Academy Award in Biological Sciences for “Research on Collagenous Biomaterials”, Romania (1995);
- Dr. C. Velican Award for “Outstanding Research in Atherosclerosis and Cardiovascular diseases”, Romania (1996);
- Clemson Board of Trustees “Award for Faculty Excellence” (2008).
- Oral Presentation awarded “Best Undergraduate Presentation”. Maivelett, J, Simionescu, D, Simionescu, A. “Cell Seeding of Heart Valve and Vascular Scaffolds: Tissue Engineering in Diabetes”. *Biomaterials Day*. *Summer Undergraduate Research Programs proceedings*. Clemson. July 23, 2009.
- Clemson Board of Trustees “Award for Faculty Excellence” (2011).
- Oral presentation awarded the “John Mayer Experience and Innovation in Tissue Engineered Heart Valves” Abstract Award for “How close are we to fully engineering a living heart valve? A tale of scaffolds, stem cells, bioreactors and sheep”, authored by Marius M. Harpa, Ionela Movileanu, Allison Kennamer, Nicholas Rierison, Ovidiu Cotoi, Horatiu Suciu, Victor Raicea, Terezia Preda, Dan Nistor, Klara Branzaniuc, Radu Deac, Simona Gurzu, Lucian Harceaga, Peter Olah, Carmen Sircuta, Agneta Simionescu, Michael Dandel and Dan Simionescu. *Annual Scientific Meeting of the Heart Valve Society, New York, March 17-19, 2016*.

### Editorial Activities

- Textbook Co-editor**, “*Vasculogenesis and Angiogenesis - from Embryonic Development to Regenerative Medicine*”, published as an Open Access Textbook by InTech publishing (2011).
- Editor-in-Chief**, “*Challenges in Regenerative Medicine*”; since 2013
- Editorial Board Member**, “*International Journal of Biomedical Engineering and Science*”; since 2013
- Editorial Advisory Board Member**, Stem Cell Research, Tissue Engineering and Regenerative Medicine for “*inTech Publishers*”; since 2016.
- Textbook Co-editor**, “*Physiologic and Pathologic Angiogenesis - Signaling Mechanisms and Targeted Therapy*”, ISBN 978-953-51-3024-6, published by INTECH as an Open Access resource (2017).
- Guest editor** for the special issue: “MSCs in Tissue Regeneration” currently being published in a 2019 issue of the journal *Bioengineering*, ISSN 2306-5354 published by MDPI AG, Basel, Switzerland.
- Textbook Co-editor**, “*Bioreactors for Tissue Engineering and Regenerative Medicine*”, will be published as an Open Access Textbook by InTech publishing (2021).

### Reviewer for Journals (23 journals)

*Nature Scientific Reports; Nature Communications; Biomaterials; Journal of Biomedical Material Research; Acta Biomaterialia; Arteriosclerosis, Thrombosis and Vascular Biology; Biomacromolecules; Biotechnology and Applied Biochemistry; Tissue Engineering; Journal of Histotechnology; Journal of Material Science; Polymer Edition; Cell and Tissues; PLoS One; Romanian Review of Laboratory Medicine; Transplantation Research and Risk Management; Cardiovascular Pathology; Medical Sciences Monitor; ACS Applied Materials & Interfaces; Annals of Biomedical Engineering; ACS Nano; Cardiovascular Engineering and Technology; Biofabrication; Journal of Cardiovascular Translational Research; Folia Biologica Krakow – Polish Academy of Sciences; Journal of Cellular and Molecular Medicine; Transplant International.*

### Reviewer for Books and Book Chapters (1 chapter)

- “**Vascular Tissue Engineering**” – a chapter submitted by Toshiharu Shinoka et al, Nationwide Children Hospital, Columbus, Ohio, USA, to the eBook series entitled: “*Frontiers in Stem Cell and Regenerative Medicine Research*” edited by Prof. Atta-ur-Rahman, FRS and Dr. Shazia Anjum.

### Grant Reviewer (total grants reviewed = 388)

- **National Institutes of Health, Interdisciplinary Molecular Sciences and Training (IMST) IRG;** Center for Scientific Review (CSR), National Institutes of Health (NIH). Ad hoc 2020 to date.

- **Department of Defense (DOD) US Army Medical Research and Materiel Command** (USAMRMC), Congressionally Directed Medical Research Programs (CDMRP), Peer Reviewed Medical Research Program (**PRMRP**). Nov 2018, April 2019. Reviewed 14 grants.
- **National Institutes of Health, BMBI Study section permanent (“charter”) member** 2013-2017. Reviewed 104 grants.
- **National Institutes of Health**, National Institute for Allergy and Infectious Diseases (**NIAID**), Special Emphasis Panel on Human Tissue Models for Infectious Diseases, U19 Multi-Disciplinary Center Grants; ad hoc member 2016. Reviewed 4 grants.
- **National Institutes of Health**, Center for Scientific Review, Biomaterials & Biointerfaces, **BMBI Study section**; *ad hoc member* 2012-2013. Reviewed 34 grants.
- **National Institutes of Health**, NHLBI, Special Emphasis Panel – Vascular Interventions/Innovations and Therapeutic Advances (VITA); 2012. Reviewed 8 grants.
- **American Heart Association** (AHA), Vascular Wall Biology Committee and Regenerative Medicine and Cell Biology Committee; yearly since 2010. Reviewed 68 grants.
- **European Research Council**, (ERC) Frontier Research Grants, Ideas Work Program 2013, FP7, European Commission; yearly since 2011. Reviewed 32 grants.
- **National Center for the Replacement, Refinement and Reduction of Animals in Research** (NCR3s), London, UK: 2010, 2011, 2012. Reviewed 12 grants.
- **Italian Ministry of Health**, Department of Innovation, Directorate for Health and Technologies Research (Italian NIH), since 2009. Reviewed 45 grants.
- **Health Research Board** (HRB) Ireland (Irish NIH), 2010, 2011, 2012. Reviewed 8 grants.
- **Executive Agency for Higher Education**, Research, Development and Innovation Funding, Romania (Romanian NIH); yearly since 2012. Reviewed 26 grants.
- **French National Research Agency** (ANR), the General Directorate for Healthcare Provision, Translational Research for Applications in Health; since 2013. Reviewed 6 grants.
- **Dutch Technology Foundation** (STW). Since 2013. Reviewed 1 grant.
- **The Netherlands Organisation for Health Research and Development** (NWO). Since 2015. Reviewed 1 grant.
- **Medical Research Council** (MRC), *Regenerative Medicine Research Committee*. Swindon, UK. Since 2012. Reviewed 3 grants.
- **Israel Science Foundation** (ISF), since 2016. Reviewed 2 grants.
- **American University of Beirut, Lebanon**, ad hoc, 2016. Reviewed 1 grant.

#### **External Thesis Reviewer (total reviewed = 2)**

- **Timothy Pennel, PhD thesis** entitled: “Isolating and optimizing transmural endothelialization as an independent mode of spontaneous vascular graft healing “. Supervisors: Deon Bezuidenhout, PhD and Peter Zilla, MD, PhD. University of Cape Town (UCT), South Africa (2013).
- **Gigi Yeung, PhD thesis** entitled: “Biophysics of Recellularized Porcine Cardiac Extracellular Matrix for Myocardial Tissue Engineering”. Supervisor: Subbu Venkatraman, PhD. Nanyang Technological University (NTU), Singapore (2014).

#### **Selected patents (out of total 22)**

|             |                                                                                                             |
|-------------|-------------------------------------------------------------------------------------------------------------|
| <u>2001</u> | Patent #6,214,055/USPTO “Method and kit for rapid preparation of autologous tissue medical devices”.        |
| <u>2007</u> | Patent #7,189,259/USPTO “Tissue material and process for bioprostheses”.                                    |
| <u>2007</u> | Patent #7,252,834/USPTO “Elastin stabilization of connective tissues”.                                      |
| <u>2010</u> | Patent #7,713,543/USPTO “Elastin stabilization of connective tissues”.                                      |
| <u>2010</u> | Patent #7,753,840/USPTO “Tissue material process for forming bioprosthesis”.                                |
| <u>2013</u> | Patent #8,435,553/USPTO “Elastin stabilization of connective tissue. Licensed to Nectero Medical Inc.       |
| <u>2014</u> | Patent #8,840,150/USPTO “Male fitting with actuating retaining feature”. Licensed to Aptus Bioreactors LLC. |
| <u>2015</u> | Patent #9,005,289/USPTO "Tissue engineered nucleus pulposus replacement"                                    |
| <u>2014</u> | Patent #8,840,150 USPTO "Male fitting with actuating retaining feature". Licensed to Aptus Bioreactors LLC. |
| <u>2016</u> | Patent #9,283,241 USPTO "Treatment to Render Implants Resistant to Diabetes". Licensed to TGenTech LLC.     |

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| <u>2016</u> | Patent #9,283,301 USPTO “Shape-memory sponge hydrogel biomaterial”                                                                          |
| <u>2018</u> | Patent #10,022,225 USPTO “Self-Adjusting Tissue Holder”. Licensed to Aptus Bioreactors LLC.                                                 |
| <u>2019</u> | Patent #10,293,082 USPTO “Decellularization method and system and decellularized tissue formed thereby”. Licensed to Aptus Bioreactors LLC. |
| <u>2020</u> | Patent Application # US2020181558-A1, USPTO “Cell seeding device”.                                                                          |

### **Clinical applications of biomaterials - Research and Development**

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|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <u>1981</u>      | <u>Co-Principal Investigator</u> . The first Romanian cardiac bioprosthetic heart valve made from bovine pericardium. Almost 1000 valves created and implanted, in clinical trials since 1985.                                                                                                             |
| <u>1990</u>      | <u>Co-Principal Investigator</u> . The mitral valve autologous free graft, original procedure under current clinical investigation for valvular reconstruction (about 175 grafts implanted).                                                                                                               |
| <u>2012-2016</u> | <u>Principal Investigator</u> . Clinical Study “Stem cells and scaffolds” IRB/IBC approved; goals are adipose tissue collection from patients, stem cell isolation and evaluation of differentiation potential.                                                                                            |
| <u>2013-2020</u> | <u>Principal Investigator</u> ; Clinical Study “Factors involved in progression of valvular heart disease”; IRB/IBC approved; project goals are collection of pathological valve tissues from patients and evaluation of mechanisms of pathogenesis by biochemical, molecular and histological techniques. |

### **Memberships**

- **Executive Board Member**, *International Society for Applied Cardiovascular Biology (ISACB)*, 2000-2006 and 2014-present.
- **Member of the Scientific Board**, *International Society for Regenerative Medicine and Surgery (ISRMS)*, 2013-present
- **Member**, *American Heart Association (AHA)*, 2010-present
- **Member**, *European Cell Biology Organization (ECBO)*, 2000-present
- **Member**, *Society for Biomaterials (SFB)*, 2004-present
- **Member**, *BioMedical Engineering Society (BMES)* 2006-present
- **Member**, *National Society for Cell Biology, Romania (SRBC)*, 1989-present
- **Member**, *Tissue Engineering and Regenerative Medicine International Society (TERMIS)*, 2005-present.

### **Conference Organizer, Abstract Reviewer**

- **Official co-organizer**, together with the University of Medicine in Timisoara, of the *5<sup>th</sup> International Congress and 31<sup>th</sup> Annual Meeting of the Romanian Society for Cell Biology*, Timisoara, Romania, June 5-9, 2013.
- **Session Chair and Co-organizer and Abstract Reviewer** for “*Biomaterial Scaffolds I*” session, and “*Cardiac muscle and Valve Tissue Engineering*” sessions for the *Biomedical Engineering Society Annual Meeting, San Antonio, TX, October 22-25, 2014*. Also **reviewer** for **Undergraduate Abstract Submissions**.
- **Session Chair and Co-organizer and abstract Reviewer** for the *6<sup>th</sup> Biannual Heart Valve Biology and Tissue Engineering Meeting*, Royal Society, London, September 12-15, 2014.
- **Organizer**, together with the University of Medicine in Targu Mures, of the *6<sup>th</sup> International Congress and 32nd Annual Meeting of the Romanian Society for Cell Biology*, Targu Mures, Romania, June 7-10, 2014.
- **Member, Program Committee** for the *2016 International Society of Applied Cardiovascular Biology (ISACB) meeting* in Banff, Canada, 2016.
- **Session Chair, Technology Translation and Commercialization** during the *2016 International Society of Applied Cardiovascular Biology (ISACB) meeting* in Banff, Canada, 2016.
- **Official Organizer**, together with Dr Kevin Taafe of the department of industrial engineering at Clemson, of the *Yearly Harriett and Jerry Dempsey Research Conference*, Greenville, SC, 2016 to present.
- **Official Organizer**, together with Dr Luke Brewster of Emory University and Dr Timothy Pennel of the University of Cape Town, of *30<sup>th</sup> International Society of Applied Cardiovascular Biology (ISACB) Meeting – a satellite meeting of the 50<sup>th</sup> Anniversary of the First Human Heart Transplant*, in Cape Town, South Africa, December 3-4 2017.

### **Industrial consulting and/or collaborative research experience**

- Medtronic Inc, Minneapolis, MN, 1999-2001. Mechanisms of calcification in bioprostheses.
- Vatrix Inc, Minneapolis, MN, 2008-2010. Treatment of aneurysms.
- Selah Inc, Pendleton, SC. 2009-2010. Use of Selah-dots for drug targeting and imaging.
- Aptus Bioreactors LLC, Clemson, SC. 2014-present. Development of bioreactors.
- HeartWare Inc, Miami Lakes, FL. 2014-present. Ventricular assist devices.
- Cook Medical Inc, Indianapolis, IN. 2016-present. Scaffolds for heart valves.
- Xeltis Inc, Belgium. 2016. Polymeric heart valves.
- Nectero Medical Inc., Mesa, AZ. 2017-present. Treatment for aneurysms.
- Alucent LLC, Salt Lake City, UT. 2018-present. Treatment of restenosis.

### C. Peer-reviewed publications (total 101)

1. D. Simionescu, M. Simionescu. "The air-blood barrier has few or lacks cationized ferritin-detectable anionic sites". *Journal of Cell Biology*, 95, 2, 109-119. (1982).
2. D. Simionescu, M. Simionescu. "Distribution of anionic sites on the cell surfaces of the air-blood barrier". *Biology of the Cell*. 45, SI.236-236. (1982).
3. D. Simionescu, M. Simionescu. "Differentiated distribution of the cell surface charge on the alveolar capillary unit". *Microvascular Research*, 25, 85-100 (1983).
4. D. Simionescu, R. Alper and N.A. Kefalides. "Partial characterization of a low molecular weight proteoglycan isolated from bovine parietal pericardium". *Biochemical and Biophysical Research Communications*, 151, 1, 480-486 (1988).
5. D. Simionescu, R.V. Iozzo and N.A. Kefalides. "Bovine pericardial proteoglycan; biochemical, immunochemical and ultrastructural studies", *Matrix*, 9, 301-310 (1989).
6. R. Deac, D. Simionescu, "Heart biomechanics", In *BIOMECHANICS*, 1989, Romanian Academy Press, Bucharest, 127-140.
7. D. Simionescu, N.A. Kefalides. "Biosynthesis of proteoglycans and interstitial collagens by bovine pericardial fibroblasts", *Experimental Cell Research*, 195, 171-176 (1991).
8. Simionescu A, D. Simionescu, R. Deac. "Lysine-enhanced glutaraldehyde crosslinking of collagenous biomaterials", *Journal of Biomedical Materials Research*, 25, 1495-1505 (1991).
9. D. Simionescu, A. Simionescu, R. Deac. "Mapping of glutaraldehyde-treated bovine pericardium for use as bioprosthetic cardiac valves", *Journal of Biomedical Materials Research*, 27, 6, 697-704 (1993).
10. D. Simionescu, A. Simionescu, R. Deac, "Detection of remnant proteolytic activities in glutaraldehyde treated bovine pericardium and in explanted cardiac bioprostheses", *Journal of Biomedical Materials Research*, 27, 6, 821-829 (1993).
11. D. Simionescu, R. Deac, A. Simionescu, "Inhibition of extracellular-matrix degrading proteases in pericardial derived cardiovascular bioprostheses", *Journal of Material Science; Materials in Medicine*, 5, 748-751 (1994).
12. R. Deac, D. Simionescu, D. Deac, "New evolution in mitral physiology and surgery; mitral stentless pericardial valve", *Annals of Thoracic Surgery*, 60, S433-S438 (1995).
13. Simionescu, D. Simionescu, R. Deac, "Matrix metalloproteinases in the pathology of natural and bioprosthetic cardiac valves". *Cardiovascular Pathology*, 5, 323-332 (1996).
14. Simionescu, D. Simionescu, R. Deac, "Biochemical pathways of tissue degeneration in bioprosthetic cardiac valves; the role of matrix metalloproteinases". *ASAIO Journal*, 42, 5, M561-M567 (1996).
15. Simionescu D, Simionescu A, Deac R, "Molecular pathology of biomaterials, in "Cell adhesion and the extracellular matrix". Book chapter and Editor. C. Cruce, A. Simionescu, D. Simionescu et.al., (eds), AIUS Publishers, Craiova, Romania, 1997.
16. M. Bracher, D. Simionescu, A. Simionescu, N. Davies, P. Human, P. Zilla, "The role of matrix metalloproteinases in tissue valve degeneration – a mini-review". *Journal of Long Term Effects of Medical Implants*, , 11(3-4), 221-230 (2001).
17. D. Simionescu, J. Lovekamp, N. Vyavahare, "Degeneration of stentless bioprosthetic heart valves is initiated during tissue preparation; an ultrastructural study. *Journal of Heart Valve Disease*, 12, 226-234 (2003).
18. D. Simionescu, J. Lovekamp, N. Vyavahare, "Glycosaminoglycan-degrading enzymes in porcine aortic heart valves; implications for bioprosthetic heart valve degeneration. *Journal of Heart Valve Disease*, 12, 217-225 (2003).
19. Simionescu D, Lovekamp JJ, Vyavahare NR, "Extracellular matrix degrading enzymes are active in porcine stentless aortic bioprosthetic heart valves". *Journal of Biomedical Materials Research*, 66(4), 755-763 (2003).
20. Simionescu D, "Prevention of calcification in bioprosthetic heart valves: challenges and perspectives". By invitation. *Expert Opinions in Biological Therapy*, 4(12), 1971-1985 (2004).

21. Basalyga DM, Simionescu D, Xiong W, Baxter BT, Starcher BC, Vyavahare NR, "Elastin degradation and calcification in an abdominal aorta injury model: role of matrix metalloproteinases", *Circulation*, 110(22), 3480-3487 (2004).
22. Lu Q, Ganesan K, Simionescu D, Vyavahare NR, "Novel porous aortic elastin and collagen scaffolds for tissue engineering", *Biomaterials*, 25(22), 5227-5237 (2004).
23. Bailey M, Pillarisetti S, Jones P, Xiao H, Simionescu D, Vyavahare N, "Involvement of matrix metalloproteinases and tenascin-C in elastin calcification", *Cardiovascular Pathology*, 13(3), 146-155 (2004).
24. Isenburg JC, Simionescu D, Vyavahare NR, "Elastin stabilization in cardiovascular implants: improved resistance to enzymatic degradation by treatment with tannic acid", *Biomaterials*, 25(16), 3293-3302 (2004).
25. Lovekamp JJ, Simionescu D, Mercuri J, Zubiate B, Sacks M, Vyavahare NR, "Stability and function of glycosaminoglycans in porcine bioprosthetic heart valves", *Biomaterials*, 27, 1507-1518 (2005).
26. Isenburg J, Simionescu D, Vyavahare N, "Tannic acid treatment enhances biostability and reduces calcification of glutaraldehyde fixed aortic wall", *Biomaterials*, 26(11), 1237-1245 (2005).
27. Simionescu D, Lu Q, Song Y, Lee JS, Rosenbalm TN, Kelley C, Vyavahare NR, "Biocompatibility and remodeling potential of pure arterial elastin and collagen scaffolds", *Biomaterials*, 27, 702-713 (2006).
28. Simionescu D. "Artificial heart valves ". By invitation; Encyclopedia of Biomedical Engineering, Metin Akay, editor. John Wiley and Sons, Inc., Hoboken, NJ. 2006.
29. Lee JS, Basalyga D, Simionescu D, Vyavahare NR, "Mechanisms of elastin calcification in rat subdermal model: gene expression associated with elastin degeneration and ectopic osteogenesis", *American Journal of Pathology*, 168, 490-498 (2006).
30. Isenburg JC, Simionescu D, Ramachandani N, Vyavahare NR, "Structural requirements for stabilization of vascular elastin by polyphenolic tannins", *Biomaterials*, 19, 3645-3651 (2006).
31. Kasyanov V, Isenburg JC, Draughn AR, Hazard S, Hodde J, Iveta O, Halkes B, Pieters R, Simionescu D, Markwald RR, Mironov V, "Tannic acid mimicking dendrimers as a small intestine submucosa stabilizing nano-agent", *Biomaterials*, 27, 745-751 (2006).
32. Simpson CL, Lindley S, Eisenberg C, Basalyga DM, Starcher BC, Simionescu D, Vyavahare NR, "Toward cell therapy for vascular calcification: osteoclast-mediated demineralization of calcified elastin", *Cardiovascular Pathology*, 16(1), 29-37 (2007).
33. Mercuri J, Lovekamp J, Simionescu D, Vyavahare N, "Targeted crosslinking of glycosaminoglycans for bioprosthetic heart valve stabilization", *Biomaterials*, 28(3), 496-503 (2007).
34. Isenburg J, Simionescu D, Starcher B, Vyavahare N, "Elastin stabilization for treatment of abdominal aortic aneurysms", *Circulation*, 115(13), 1729-37 (2007).
35. Kurane A, Simionescu D, Vyavahare N, "In vivo cellular repopulation of tubular elastin scaffolds mediated by basic fibroblast growth factor", *Biomaterials*, 28(18), 2830-2838 (2007).
36. Raghavan D, Simionescu D, Vyavahare N, "Neomycin prevents enzyme-mediated glycosaminoglycan degradation in bioprosthetic heart valves", *Biomaterials*, 28(18), 2861-8 (2007).
37. Simionescu A, Simionescu D, Vyavahare N, "Osteogenic responses in fibroblasts activated by elastin degradation products and transforming growth factor-beta1: role of myofibroblasts in vascular calcification", *American Journal of Pathology*, 171(1), 116-23 (2007).
38. J.C. Isenburg, D.T. Simionescu, B.C. Starcher. Elastin stabilization for treatment of abdominal aortic aneurysms, *Journal of Vascular Surgery* 09, (2007); 46(3):608.
39. Y.Y. Yuan, P.J. Kostenuik, S. Morony, D. Simionescu, D.M. Basalyga, T.A. Bateman, "Skeletal deterioration induced by RANKL infusion; a model for high-turnover bone disease", *Osteoporosis International*, 19(5), 625-35 (2008).
40. M. E. Tedder, J. Liao, B. Weed, C. Stabler, H. Zhang, A. Simionescu, D. Simionescu, "Stabilized collagen scaffolds for heart valve tissue engineering", *Tissue Engineering Part A*, 15(6), 1257-1268 (2009).
41. T. Chuang, C. Stabler, A. Simionescu, D. Simionescu, "Polyphenol-stabilized tubular elastin scaffolds for tissue engineered vascular grafts", *Tissue Engineering*, 15(10), 2837-2851 (2009).
42. M. E. Plonska-Brzezinska, A. Palkar, K. Winkler, A. Simionescu, D. Simionescu, A. Dubis, A. J. Athans, L. Echegoyen, "Small non-cytotoxic carbon nano-onions: investigation of the electrochemical behavior and their potential application", *Chemistry*, 16(16), 4870-4880. (2010).
43. Wang, A. Borazjani, M. Tahai, A.L. de Jongh Curry, D. Simionescu, J. Guan, F. To, S.H. Elder, J. Liao, "Fabrication of Cardiac Patch with Decellularized Porcine Myocardial Scaffold and Bone Marrow Mononuclear Cells", *Journal of Biomaterial Materials Research, part A*, 94(4), 1100-1110 (2010).
44. L. Sierad, C. Albers, J. Maivelett, M. Tedder, J. Liao, D. Simionescu, A. Simionescu, "Design and testing of a pulsatile conditioning system for dynamic endothelialization of polyphenol-stabilized tissue engineered heart valves", *Cardiovascular Engineering and Technology*, 1(2), 138-153 (2010).

45. J Mercuri, A Simionescu, D Simionescu. "Xenogenic Cues for Human Mesenchymal Stem Cell Differentiation towards a Nucleus Pulposus Cell-like Phenotype". *Spine Journal*. 2010; 10(9).
46. M.B. Ariganello, D. Simionescu, R.S. Labow, M. Lee, "Macrophage Differentiation and Polarization on a Decellularized Pericardial Biomaterial". *Biomaterials*, (2011) 32(2):439-49.
47. JJ. Mercuri, S.S. Gill, D.T. Simionescu, "Novel Tissue Derived Biomimetic Scaffold for Regenerating the Human Nucleus Pulposus". *Journal of Biomaterial Materials Research, part A*. Feb (2011). 96A (2), 422–435.
48. ME Tedder, J. Liao, A. Simionescu, DT Simionescu, "Assembly and testing of layered collagen constructs for heart valve tissue engineering". *Tissue Engineering, Part A*. (2011). 17(1-2):25-36.
49. Simionescu, ME Tedder, TH Chuang, D Simionescu. "Lectin and Antibody-Based Histochemical Techniques for Cardiovascular Tissue Engineering". *Journal of Histotechnology*, April (2011). 34(1):20-28.
50. Simionescu, JB Schulte, G Fercana, DT Simionescu, "Inflammation in Cardiovascular Tissue Engineering: The Challenge to a Promise: A Minireview," *International Journal of Inflammation*, vol. 2011, Article ID 958247, 11 pages, (2011). doi:10.4061/2011/958247
51. D Simionescu, A Simionescu; book editors. InTech - Open Access Publisher, Rijeka, Croatia. Title, "Vasculogenesis and Angiogenesis – from Embryonic Development to Regenerative Medicine". (2011). ISBN-10: 1420076949 | ISBN-13: 978-1420076943.
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99. D Simionescu, M Casco, J Turner, N Rierison, J Yue, K Ning. "Chemical Stabilization of The Extracellular Matrix Attenuates Growth of Experimentally Induced Abdominal Aorta Aneurysms in a Large Animal Model". *Journal of Vascular Surgery* (2020); 1; 69-80.
100. A Filippi, A Constantin, N Alexandru, G Voicu, C Constantinescu, D Rebleanu, M Fenyo, D Simionescu, A Simionescu, I Manduteanu, A Georgescu. "Integrins  $\alpha 4\beta 1$  and  $\alpha V\beta 3$  are reduced in endothelial progenitor cells from diabetic dyslipidemic mice and may represent new targets for therapy in aortic valve disease". In press, *Cell Transplantation*, July 2020
101. H Al Hussein, H. Al Hussein, D Simionescu, C Sircuta, O S Cotoi, I Movileanu, D Nistor, B Cordos, R Deac, H Suci, K Brnzaniuc, M M Harpa. "Challenges in perioperative animal care for orthotopic implantation of tissue-engineered pulmonary valves in the ovine model." *Tissue Engineering and Regenerative Medicine*. In press, July 2020.

**Web of science:** total publications including patents: **155**. Total citations: **2600**; H-index = **31**

**Google Scholar:** total publications including patents: **143**. Total citations: **4281**; H-index = **40**

### **INVITED PRESENTATIONS (total 16)**

1. **Eastern Regional Research Centre**, Philadelphia, PA. Lecture given on: "Bovine pericardium as a biomaterial in reconstructive surgery". 1991. **Invited lecturer.**
2. **National Cardiovascular Centre**, Osaka and Tokyo University, Tokyo, Japan. Lectures given on: "Cardiovascular Regenerative Medicine". 2006. **Invited lecturer.**
3. **Medical University of South Carolina**, Charleston, SC. Lecture given on: "Personalized Regenerative Medicine". CDBC symposium, Charleston SC, April 21-23, 2010. **Invited lecturer.**
4. **Brown University**, Providence RI. Lecture given on: "Translational Regenerative Medicine". March 2nd, 2012. **Invited lecturer.**
5. **Medical School, University of South Carolina**, Columbia, SC. "Translational Regenerative Medicine; Bringing Tissue Engineering to the Patient". March 19, 2012. **Invited lecturer.**
6. **"Valves in the Heart of the Big Apple"** Society for Heart Valve Disease Meeting – NY. Lecture given on "Heart Valve Tissue Engineering; use of Adipose Derived Stem Cells". April 12-14, 2012. **Invited lecturer and Faculty.**
7. **Southern Biomedical Engineering Conference**, Houston, TX. Lecture given: "Scaffolds, Stem Cells and Stimuli for Translational Tissue Engineering". May 4-6, 2012. **Invited keynote speaker and Faculty.**
8. **4<sup>th</sup> International Congress** and 30<sup>th</sup> Annual Meeting of the Romanian Society for Cell Biology, Satu-Mare, Romania, June 13-17, 2012. **Invited keynote speaker.** "Scaffolds, stem cells and stimuli for translational tissue engineering".
9. **5<sup>th</sup> International Congress** and 31<sup>th</sup> Annual Meeting of the Romanian Society for Cell Biology, Timisoara, Romania, June 5-9, 2013. **Invited keynote speaker.** "Recent advances in heart valve tissue engineering and regeneration".
10. **14<sup>th</sup> Biannual Meeting** of the International Society for Applied Cardiovascular Biology (ISACB), Cleveland, OH, April 2-5, 2014. Title: "Bioengineering challenges in heart valve tissue regeneration". **Invited speaker** at the Satellite Meeting "Stem Cells for Disease Modeling and Regenerative Therapeutics".
11. **International Conference** of the International Society for Regenerative Medicine and Surgery (ISRMS), Bucharest, Romania, June 12, 2014. Title: "Pre-clinical testing of cardiovascular scaffolds". **Invited keynote speaker.**
12. **International Workshop on Biomedical Engineering** Osaka Institute of Technology, Osaka, Japan, November 16<sup>th</sup> 2014. Title: "Scaffolds and cells for heart valve tissue engineering". **Invited speaker.**
13. **First International Congress** of the International Society for Regenerative Medicine and Surgery (ISRMS), Bucharest, Romania, May 15-16, 2015. Title: "Adult stem cell-based cardiac valve tissue regeneration". **Invited keynote speaker.**
14. **University of Pennsylvania, Philadelphia, PA.** Lecture given on "Heart valve tissue engineering: a tale of scaffolds, cells and stimuli". March 10, 2016. **Invited lecturer.**
15. **Oklahoma Center for Adult Stem Cell Research.** Lecture on "Adult stem cells, matrix scaffolds and bioreactors for cardiac valve tissue regeneration". June 4, 2019. **Invited speaker.**
16. **Center for Heart and Regenerative Medicine at Virginia Tech Carilion Research Institute.** Lecture on "Cardiovascular regenerative medicine". August, 2019. **Invited speaker.**

### **PEER REVIEWED CONFERENCE PROCEEDINGS (total 185)**

Papers with published abstracts were presented at National and International Conferences (BMES, SFB, ISACB, ORS, TERMIS, NANOTech, NASS, ICTE, ATVB) in Greece, Spain, Switzerland, Italy, Germany, United Kingdom, the Netherlands, Romania and the USA.

In the USA: Washington DC, New York NY, Tucson AZ, Reno, NV, Nashville, TN, Savannah, GA, Philadelphia, PA, Memphis, TN, Pittsburg, PA, San-Diego, CA, Hilton Head, SC, Chicago IL, Los Angeles, CA, Charleston, SC, Atlanta, GA, Irvine, CA, Las Vegas, NV, Seattle, WA, Napa, CA, New-Orleans, LA, Orlando, FL, Boston MA, Houston, TX, Keystone, CO, Cleveland OH.

### **Selected Conference Proceedings**

1. Deac R. Bradisteanu S, Fagarasanu E, Simionescu D, Liebhart M. "Research on new types of biological cardiac valves", 2<sup>nd</sup> *Symposium of Cardiovascular Surgery*, Bucharest, Romania, 1982. Oral presentation.

2. Deac R, Bradisteanu S, Simionescu D, Fagarasanu E, Simionescu A. "Recent developments in basic research of heart valve replacement with artificial bioprotheses", *Symposium "Progress in medical sciences", Cluj Napoca, Romania, 1982. Oral presentation.*
3. Simionescu A, Simionescu D, Deac R. "Cellular biology and pathology of normal and artificial heart valves", *3<sup>rd</sup> Annual Conference of the National Society for Cell Biology, Targu Mures, Romania, 1985. Oral presentation.*
4. Simionescu D, Simionescu A, Deac R. "Surface Charge Characterization of Bioprosthetic Heart Valves", *The 17<sup>th</sup> National Symposium of Biophysics, Targu Mures, Romania, 1986.*
5. Simionescu D, Simionescu A, Deac R., Egyed-Zsigmond I, Dandel M. "Application of an experimental model for the study of calcification in cardiac bioprotheses", *9<sup>th</sup> Scientific Session of the Medical Research Center, Targu Mures, Romania, 1986. Oral presentation.*
6. Deac R, Bradisteanu S, Simionescu A, Simionescu D. "The Mures bioprosthetic cardiac valve - techniques for construction, testing and implantation", *Symposium "Recent advances in surgery", Targu Mures, Romania, 1987.*
7. Simionescu D, Simionescu A, Deac R. "Calcium Deposition in Bioprosthetic Heart Valves. Attempted Mechanisms & Experimental Models", *Fourth International Conference on Water and Ions in Biological Systems, Bucharest, Romania, 1987.*
8. Deac R, Simionescu A, Simionescu D. "Gamma-carboxyglutamic acid - a putative indicator of the evolution of calcification in heterologous 1
9. Simionescu A, Simionescu D, Kefalides N. "Extracellular matrix components of bovine fibrous pericardium; biochemical, immunochemical and ultrastructural studies", *5<sup>th</sup> International Congress on Cell Biology, Madrid, Spain, July 26-31, 1992.*
10. Simionescu D, Simionescu A, Deac R. "Monitoring of cyclosporine levels by HPLC and applications to heart transplants", *3rd Annual Conference of the National Society for Cell Biology, Targu Mures, Romania, 1992. Oral presentation.*
11. Simionescu D, Simionescu A, Deac R. "Proteolytic activities in glutaraldehyde crosslinked bovine pericardium and explanted bioprosthetic heart valves", *10<sup>th</sup> European Conference on Biomaterials, Davos, Switzerland, Sept. 8-11, 1993. Oral presentation.*
12. Simionescu D, Deac R, Simionescu A. "Inhibition of extracellular matrix degrading proteases in pericardial derived cardiovascular bioprotheses", *11<sup>th</sup> European Conference on Biomaterials, Pisa, Italy, Sept. 10-14, 1994. Oral presentation.*
13. Simionescu A, Simionescu D, Deac R. "Enzymes proteolytiques dans la pathologie des bioprotheses valvulaires", *Colocvium Louis Pasteur - Science in the Service of Mankind, Bucharest, Romania, Oct. 4-6, 1995. In French.*
14. Simionescu A, Simionescu D, Deac R. "Matrix metalloproteinases in the pathology of natural and bioprosthetic cardiac valves". *42<sup>nd</sup> Annual Cardiovascular Science and Technology Conference of the American Society for Artificial Internal Organs (ASAIO), Washington, DC, USA, May 2-4, 1996.*
15. Simionescu A, Simionescu D, Deac R. "Modulation of collagenases and the biocompatibility of pericardial derived heart valves", *43<sup>rd</sup> Annual Conference of the American Society for Artificial Internal Organs (ASAIO), Atlanta, GA, USA, May 1-3, 1997.*
16. Simionescu A, Simionescu D, Deac R. "The effect of glutaraldehyde on the activity of matrix degrading proteases", *44<sup>rd</sup> Annual Conference of the American Society for Artificial Internal Organs (ASAIO), New York, NY, USA, April 23-25, 1998.*
17. Simionescu A, Simionescu D, Deac R. "The role of metalloproteinases in bioprosthetic valve degeneration", *6<sup>th</sup> Biannual Meeting of the International Society for Applied Cardiovascular Biology (ISACB), Munich, Germany, March 3-5, 1998. Oral presentation.*
18. Simionescu A, Simionescu D, Deac R. "Extracellular matrix remodeling in cardiac failure", *3rd Annual Conference of the National Society for Cell Biology, Constanta, Romania, 1999.*
19. Simionescu D, Simionescu A, Deac R. "Immunomagnetic techniques in cell and molecular biology", *3rd Annual Conference of the National Society for Cell Biology, Constanta, Romania, 1999.*
20. Deac R, Simionescu D, Simionescu A. "Evolution of the mitral stentless autologous pericardial valve", *World Symposium on Heart Valve Disease, London, UK, June 11-14, 1999. Oral presentation.*
21. Deac R, Simionescu A, Simionescu D, Deac D. " Stentless mitral valve prostheses from autologous pericardium", *3rd Annual Conference of the National Society for Cell Biology, Constanta, Romania, 1999. Oral presentation.*

22. Simionescu D, Simionescu A, Girardot MN, Girardot JM. "Inhibition of bioprosthetic aortic wall calcification by molecular targeting of calcium-binding substrates", *7<sup>th</sup> Biennial Meeting of the International Society for Applied Cardiovascular Biology, Tucson, AZ, USA, 2000*. Oral presentation.
23. Simionescu A, Simionescu D, Deac R. "Nitric oxide stimulates matrix metalloproteinases and reduces myocardial fibrosis", *8<sup>th</sup> Biennial Meeting of the International Society for Applied Cardiovascular Biology, St. Gallen, Switzerland, 2002*.
24. Lu Q, Ganesan K, Simionescu D, Vyavahare N. "Preparation and characterization of novel aortic scaffolds for tissue engineering", *Biomedical Engineering Society Annual Meeting, Nashville, TN, 2003*.
25. Lovekamp J, Simionescu D, Vyavahare N. "Glycosaminoglycan fixation of bioprosthetic heart valves", *Biomedical Engineering Society Annual Meeting, Nashville, TN, 2003*.
26. Simionescu D, Lovekamp J, Vyavahare N. "Mechanisms of glycosaminoglycan loss from bioprosthetic heart valves", *Society for Biomaterials Annual Meeting, Reno, NV, 2003*.
27. Simionescu D, Lovekamp J, Vyavahare N. "Degeneration of porcine bioprosthetic heart valves: The involvement of intrinsic enzymes", *Society for Biomaterials Annual Meeting, Reno, NV, 2003*.
28. Lovekamp J, Simionescu D, Sacks M, Vyavahare N. "Glycosaminoglycans and the mechanical durability of glutaraldehyde-fixed bioprosthetic heart valves", *Biomedical Engineering Society Annual Meeting, Philadelphia, PA, 2004*.
29. Simionescu A, Simionescu D, Zegrean A, Sin A, Deac R. "Myocardial fibrosis in transplanted human hearts", *9<sup>th</sup> Biennial Meeting of the International Society for Applied Cardiovascular Biology, Savannah, GA, USA, 2004*.
30. Isenburg J, Simionescu D, Vyavahare N. "Elastin stabilization in cardiovascular implants by treatment with tannic acid", *9<sup>th</sup> Biennial Meeting of the International Society for Applied Cardiovascular Biology, Savannah, GA, USA, 2004*.
31. Lu Q, Vyavahare N, Simionescu D. "Repopulation of aortic elastin scaffolds in an intramuscular implantation model", *Society for Biomaterials Annual Meeting, Memphis, TN, 2005*.
32. Basalyga D, Simionescu D, Vyavahare N. "A new approach to study mechanisms of vascular calcification using an abdominal aorta injury model", *Society for Biomaterials Annual Meeting, Memphis, TN, 2005*. Oral presentation.
33. Lee J, Basalyga D, Simionescu D, Vyavahare N. "Osteogenic and matrix remodeling gene expression associated with elastin calcification", *Society for Biomaterials Annual Meeting, Memphis, TN, 2005*.
34. Simpson L, Simionescu D, Lindley S, Vyavahare N. "Osteoclast-mediated demineralization of calcified elastin", *Society for Biomaterials Annual Meeting, Memphis, TN, 2005*.
35. Isenburg J, Simionescu D, Ramachandani N, Vyavahare N. "Structural and functional prerequisites for tannic acid-mediated stabilization of vascular elastin", *Society for Biomaterials Annual Meeting, Memphis, TN, 2005*. Oral presentation.
36. Basalyga D, Simionescu D, Xiong W, Baxter T, Starcher B, Vyavahare N. "Role of elastin degradation and matrix metalloproteinases in vascular calcification", *Society for Biomaterials Annual Meeting, Memphis, TN, 2005*.
37. Basalyga D, Simionescu D, Starcher B, Vyavahare N. "Molecular mechanisms of elastin-oriented calcification in an aortic injury model". *10<sup>th</sup> Biannual Meeting of the International Society for Applied Cardiovascular Biology, San Diego, CA, USA, 2006*.
38. Simionescu D. "Form follows function; design of anatomically correct scaffolds for heart valve tissue engineering", *Biomedical Engineering Society Annual Meeting, Los Angeles, CA, 2007*.
39. Tedder M, Simionescu D. "Collagen Scaffolds for Heart Valve Tissue Engineering", *Biomedical Engineering Society Annual Meeting, Los Angeles, CA, 2007*.
40. Chuang T, Simionescu D. "Polyphenol-stabilized Porous Elastin Scaffolds for Vascular Tissue Engineering", *Biomedical Engineering Society Annual Meeting, Los Angeles, CA, 2007*.
41. Simionescu, A, C. Albers, R. Stowers, L. Sierad, J. Mercuri, T. Chuang, M. Tedder, Simionescu D. "Penta-galloylglucose-Stabilized Acellular Scaffolds for Tissue Engineered Heart Valves". *Tissue Engineering and Regenerative Medicine Society (TERMIS)-North America Annual Conference, San Diego, CA, December 7 - 10, 2008*.
42. L. Sierad, Simionescu D. "In vitro testing of living aortic heart valves using a pulsatile bioreactor". *American Society of Mechanical Engineers (ASME) Frontiers in Biomedical Devices Conference, Irvine, CA, June 2008*. Poster 'showcase' (1 minute oral presentation) and Poster Presentation. Awarded 3<sup>rd</sup> Prize in the Student Poster Competition.
43. T. Chuang, Simionescu D. "Biostability of polyphenol-stabilized porous elastin scaffolds for vascular graft engineering". *Hilton Head Regenerative Medicine Workshop, Hilton Head Island, SC, 2008*.

44. M. E. Tedder, Simionescu D. "Evaluation of crosslinking processes for collagen scaffolds used in heart valve tissue engineering". *SC INBRE Research Symposium, Charleston, SC, 2008*. Oral presentation.
45. T. Chuang, Simionescu D. "Development of biocompatible elastin scaffolds for vascular tissue engineering". *SC INBRE Research Symposium, Charleston, SC, 2008*.
46. L. Sierad, Simionescu D. "Design of a pulsatile bioreactor for in vitro conditioning of tissue engineered aortic heart valves". *SC INBRE Research Symposium, Charleston, SC, 2008*.
47. Maivelett, J, Simionescu, D, Simionescu, A, "Stem Cell Seeding of Heart Valve and Vascular Scaffolds: Tissue Engineering in Diabetes". *Southeast Biomedical Engineering Career Conference (SEBECC), Washington, DC, Oct 30, 2009*.
48. Pascal, R, Mercuri, J, Simionescu, D. "Characterization of Chemically Stabilized Hydrogels for Tissue Engineering the Nucleus Pulposus". *Biomaterials Day". 2009 Summer Undergraduate Research Programs proceedings. Clemson. July 23, 2009*.
49. Zhang, HS, Simionescu, D, Simionescu, A, "Biochemical Cues for Adipose-Tissue Derived Stem Cell Differentiation in Diabetes". *Biomaterials Day". 2009 Summer Undergraduate Research Programs proceedings. Clemson. July 23, 2009*.
50. Maivelett, J, Simionescu, D, Simionescu, A. "Cell Seeding of Heart Valve and Vascular Scaffolds: Tissue Engineering in Diabetes". *Biomaterials Day". 2009 Summer Undergraduate Research Programs proceedings. Clemson. July 23, 2009*. Oral Presentation. Awarded "Best Undergraduate Presentation".
51. Mercuri, J, Gill, S, Simionescu, D. "Novel penta-galloyl-glucose Stabilized Hydrogels for Tissue Engineering the Nucleus Pulposus". *Orthopaedic Research Society, Las Vegas, 2009*.
52. J. Luszczyn, M.E. Plonska-Brzezinska, A. Dubis, K. Winkler, A. Palkar, A. Simionescu, D.T. Simionescu, L. Echegoyen. "Studies of biomolecular interactions in biosensor based on small Carbon Nano-Onions". *Central European School on Physical Organic Chemistry - Weak Molecular Interactions, Przesieka, Poland, 2-6 June, 2009*.
53. M.E. Plonska-Brzezinska, J. Luszczyn, A. Dubis, A. Palkar, A. Simionescu, D.T. Simionescu, L. Echegoyen. "Studies of Carbon Nano-Onions based biosensors". *6th International Conference on Nanoscience and Nanotechnology, Thessaloniki, Greece, 13-15 July, 2009*.
54. M.E. Plonska-Brzezinska, J. Luszczyn, A. Palkar, A. Dubis, A. Simionescu, D.T. Simionescu, B. Kalska-Szostko, L. Echegoyen. "Non-cytotoxic small Carbon Nano-Onions - the first covalent functionalization with biomolecules". *European Materials Research Society Meeting, Warsaw, Poland, 14-18 September, 2009*.
55. M. Tedder, J. Liao, J. Chen, L. Sierad, R. Stowers, A. Simionescu, D. Simionescu, "Patient-tailored aortic heart valve tissue engineering". *Hilton Head Regenerative Medicine Workshop, Hilton Head Island, SC, 2010*.
56. J. Mercuri, R. Pascal, S. Gill, D. Simionescu, "Tissue-Derived Extracellular Matrix Scaffolds for Regenerating the Human Nucleus Pulposus", *Orthopedic Research Society Meeting, New Orleans, LA, 2010*.
57. Zhang, H.S., Maivelett, J., Stowers R., Mary E. Tedder, Simionescu, D., Simionescu, A. "Stem Cell Reactivity to Cardiovascular-Specific Differentiation Cues is Altered in Diabetic Conditions". *Society for Biomaterials Annual Meeting, Seattle, WA, 2010*. Oral presentation.
58. D. Simionescu, M. Tedder, T. Chuang, J. Liao, A. Simionescu. "Reversible stabilization of biologic scaffolds for cardiovascular tissue engineering". *Biologic Scaffolds Symposium, Napa Valley, CA, 2010*. Oral presentation.
59. D. Simionescu, L. Sierad, C. Albers, J. Maivelett, J. Chen, M. Tedder, J. Liao, A. Simionescu. "Endothelialization of reversibly stabilized heart valve scaffolds in a pulsatile bioreactor". *12<sup>th</sup> Biannual Meeting of the Int. Society for Applied Cardiovascular Biology, Boston, MA, 2010*.
60. A. Simionescu, D. Simionescu. "Diabetes alters stem cells and scaffolds used in heart valve tissue engineering". *12<sup>th</sup> Biannual Meeting of the International Society for Applied Cardiovascular Biology, Boston, MA, 2010*.
61. J. Mercuri, C. Addington, S. Gill, D. Simionescu. "New hydrogel biomaterials for the minimally invasive treatment of disc degeneration". *Annual Meeting of the Society for Minimally Invasive Spine Surgery, Miami, FL, 2010*.
62. Mercuri, J, S. Gill, A. Simionescu, D. Simionescu, "Xenogenic cues for human mesenchymal stem cell differentiation towards a Nucleus Pulposus cell-like phenotype", *North American Spine Society Orlando, FL, 2010*. e-poster.

63. Addington, C; Mercuri, J; Gill, S; Simionescu, D, “Stabilized Elastin-Glycosaminoglycan-Collagen Shape-Memory Sponge Scaffolds for Nucleus Pulposus Tissue Engineering”. *Orthopedic Research Society Meeting, Long Beach, CA, January 2011.*
64. Simionescu, A, Chow J, Liao J, Simionescu, D. “Experimental Diabetes Alters Biological Scaffolds used in Cardiovascular Tissue Engineering; Treatment with Polyphenols Protect Scaffolds from Diabetes-related Complications”. *4<sup>th</sup> International Conference on Tissue Engineering*, Chania, Crete, Greece, June 2011.
65. J. Chow, D. Simionescu, H. Warner, B. Wang, J Liao, A. Simionescu. “Diabetes-Related Alterations in Collagen Scaffolds used for Cardiovascular Tissue Engineering; Mitigation with Antioxidants”. *Keystone Symposium on Regenerative Tissue Engineering and Transplantation, Beaver Run Resort, Colorado, April 1-6, 2012. Oral Presentation.*
66. D Simionescu, M Jaeggli, J Liao, A. Simionescu. “Translational Patient-Tailored Aortic Heart Valve Tissue Engineering”. *Keystone Symposium on Regenerative Tissue Engineering and Transplantation, Beaver Run Resort, Colorado, April 1-6, 2012.*
67. D. Simionescu, M. Jaeggli, Jun Liao, A. Simionescu. “Translational Personalized Regenerative Medicine: Scaffolds and Stem Cells for Patient-Tailored Aortic Heart Valve Tissue Engineering”. *Fourth Annual Joint Scientific Meeting of the Heart Valve Society of America (HVSA) & Society of Heart Valve Disease (SHVD)*, New York, April 12-14, 2012. Oral presentation.
68. J. Schulte, A. Simionescu, D. Simionescu. “A Novel Decellularized and Vascularized Scaffold for Tissue-Engineered Regeneration of Myocardium”, *7th Symposium on Biologic Scaffolds for Regenerative Medicine, Silverado Resort, Napa, CA, April 26-28, 2012.*
69. J. Chow, D. Simionescu, N. Topoluk, B. Wang, J. Liao, A. Simionescu. “Diabetes-Related Alterations in Collagen Scaffolds and Mitigation with Antioxidants”. *7th Symposium on Biologic Scaffolds for Regenerative Medicine, Napa, CA, April 26-28, 2012.*
70. Dan Simionescu. “Scaffolds, Stem Cells and Stimuli for Translational Tissue Engineering”. *Southern Biomedical Engineering Conference, Houston, TX, May 4-6, 2012. Oral presentation.*
71. L. Sierad, Laine Shaw, Jiro Nagatomi, Dan Simionescu. “Bioreactor Testing of Endothelial Cell Coated Mechanical Heart Valves to Reduce Thrombogenic Effects”. *Southern Biomedical Engineering Conference, Houston, TX, May 4-6, 2012. Oral presentation.*
72. G. Fercana, Eugene Langan, D. Simionescu. “Development of Tissue Engineered Small Diameter Vascular Grafts for Peripheral Bypass Surgery Using an All-in-One Decellularization-Bioreactor Device”. *Southern Biomedical Engineering Conference, Houston, TX, May 4-6, 2012. Oral and poster presentation.*
73. Dan Simionescu, Michael Jaeggli, James Chow, Jason Schulte, Jeremy Mercuri, Katy Jaeggli, Lee Sierad, Richard Pascal, Christopher Ferreir, Devon Bowser, Grace Dion, Harleigh Warner, Henry Zhang, Jonathan Hill, Laine Shaw, Laura McCallum, Natasha Topoluk, Thomas Larrew, Ryan Gedney, Agneta Simionescu, “Scaffolds, stem cells and stimuli for translational tissue engineering”. *4<sup>th</sup> International Congress and 30<sup>th</sup> Annual Meeting of the Romanian Society for Cell Biology, Satu-Mare, Romania, June 13-17, 2012. Oral presentation.*
74. James Chow, Harleigh Warner, Dan Simionescu, Jun Liao, Agneta Simionescu. “Diabetes-Induced Inflammatory Response in Collagen Scaffolds used for Cardiovascular Tissue Engineering; Mitigation with Antioxidants” *Biomedical Engineering Society (BMES) Annual Meeting, Atlanta, GA, Oct 24-27, 2012*
75. Thomas Larrew, James Chow, George Fercana, Jason Schulte, Dan Simionescu, Agneta Simionescu, “Assessment of Biochemical Contributions to Diabetic Cardiomyopathy – Pathology and Development of an Appropriate in vitro Model”. *Biomedical Engineering Society (BMES) Annual Meeting, Atlanta, GA, Oct 24-27, 2012*
76. George Fercana, Eugene Langan, Christopher Wright, Devon Bowser, Dan Simionescu. “Cell Seeding and Dynamic Conditioning of Long Xenogeneic Acellular Vascular Scaffolds”. *Biomedical Engineering Society (BMES) Annual Meeting, Atlanta, GA, Oct 24-27, 2012.*
77. Richard Pascal, Lee Sierad, Dan Simionescu, Agneta Simionescu, “Dynamic Endothelialization and Conditioning of Aortic Heart Valve Scaffolds Using Adult Stem Cells”. *Biomedical Engineering Society (BMES) Annual Meeting, Atlanta, GA, Oct 24-27, 2012.*
78. Grace Margaret Dion, Jeremy Mercuri, Dan Simionescu, Richard Hawkins. “Evaluation of BMP-12 to Induce Differentiation of Adipose Derived Stem Cells Into Tenocytes to Improve Rotator Cuff Repair”. *Biomedical Engineering Society (BMES) Annual Meeting, Atlanta, GA, Oct 24-27, 2012.*
79. Thomas Larrew, James Chow, Jason Schulte, Dan Simionescu, Agneta Simionescu, “The Roles of Various Metabolic Enzymes in Diabetic Cardiomyopathy – In Vivo and In Vitro Approach”, *13<sup>th</sup> Biannual Meeting of the International Society for Applied Cardiovascular Biology (ISACB), London, UK, September 12-15, 2012.*

80. Deon Bezuidenhout, Tim Pennel, George Fercana, Peter Zilla, Dan Simionescu, "Evaluation of Elastin Derived Vascular Grafts in a Circulatory Model", *13<sup>th</sup> Biannual Meeting of the International Society for Applied Cardiovascular Biology (ISACB)*, London, UK, September 12-15, 2012.
81. George Fercana, Eugene Langan, Christopher Wright, Dan Simionescu, "Development of Living Vascular Grafts for Peripheral Bypass Applications using a Novel Transmural Perfusion Bioreactor", *13<sup>th</sup> Biannual Meeting of the International Society for Applied Cardiovascular Biology (ISACB)*, London, UK, September 12-15, 2012.
82. Mattix, B., Poole, J., Casco, M., Visconti, R., Simionescu, D., Simionescu, A., Alexis, F. "Spatial Control of Magnetic Nanoparticles Integrated with Cellular Spheroids as Tissue Engineered Building Blocks." *Society for Biomaterials 2012 Fall Symposium*. New Orleans, LA, October 5, 2012.
83. Mattix, B., Reese, L., Poole, J., Visconti, R., Simionescu, D., Simionescu, A., Jenkins, L., Bruce, T., Alexis, F. Assembly of Engineered Blood Vessels Using Magnetic Forces. *The South Carolina Project for Organ Biofabrication Scientific Symposium 2012*. Columbia, SC.
84. Mattix, B., Poole, J., Casco, M., Visconti, R., Simionescu, D., Simionescu, A., Alexis, F. Spatial Control of Magnetic Nanoparticles Integrated with Cellular Spheroids as Tissue Engineered Building Blocks. *Society for Biomaterials 2012 Fall Symposium*. New Orleans, LA.
85. Mattix, B., Poole, J., Casco, M., Visconti, R., Simionescu, D., Simionescu, A., Alexis, F. Spatial Control of Magnetic Nanoparticles in Cellular Spheroids as Tissue Engineered Building Blocks. *Biomedical Engineering Society 2012 Annual Meeting*. Atlanta, GA.
86. Mattix, B., Poole, T., Casco, M., Visconti, R., Simionescu, D., Simionescu, A., Alexis, F. Spatial Control of Magnetic Nanoparticles Integrated with Cellular Spheroids as Tissue Engineered Building Blocks. SCBIO Conference – What's Next? *Annual SC MedTech Entrepreneurship and Industry Conference 2012*. Greenville, SC.
87. Moore T, Stoner B, Morrison R, Simionescu A, Simionescu D, Recknor C, Alexis F. Targeted, Multifunctional Nanoparticles for Controlled Delivery of Anabolic Bone Therapy Drugs. *Society for Biomaterials Fall Symposium*. 2012, New Orleans, LA.
88. Mattix, B., Olsen, T., Casco, M., Herbst, A., Uvarov, O., Simionescu, D., Visconti, R., Alexis, F. Janus Magnetic Cellular Spheroids for Tissue Engineering. *NSF SC EPSCoR Annual Meeting 2013*. Columbia, SC.
89. Michael Jaeggli, Nicholas Rearson, Lee Sierad, Laine Shaw, Allison Kennamer, James Chow, Chris deBorde, Jason Schulte, Harleigh Warner, Agneta Simionescu, Dan Simionescu. "Recent advances in heart valve tissue engineering and regeneration". *5<sup>th</sup> International Congress and 31<sup>th</sup> Annual Meeting of the Romanian Society for Cell Biology*, Timisoara, Romania, June 5-9, 2013. Oral presentation.
90. Michael P Jaeggli, Dan T Simionescu. "Assembly and Testing of Tri-layered Tissue Engineered Heart Valves in Physiologically Relevant Conditions". *Tissue Engineering and Regenerative Medicine International Society – Americas (TERMIS-AM)*, Atlanta, GA, November 2013.
91. Chow J, Warner H, Simionescu D, Liao J, Simionescu A. "Collagen and Elastin Binding Polyphenols Protect Scaffolds and Stem Cells from Diabetes-Related Complications". *Society for Biomaterials (SFB)*, Boston, MA, May 2013. Oral Presentation.
92. Chow J, Carter A, Simionescu D, Simionescu A. "Mitigation of Inflammation-Derived Calcification in Implanted Elastin Scaffolds with Autologous Adipose Stem Cells." *Biomaterials Day Symposium*, Clemson, SC, November 2013. Oral Presentation.
93. Chow J, Carter A, Simionescu D, Simionescu A. "Immunomodulatory Effects of Autologous Adipose-Derived Stem Cells on Scaffold Remodeling in Diabetes". *Tissue Engineering and Regenerative Medicine International Society – Americas (TERMIS-AM)*, Atlanta, GA, November 2013.
94. Allison R. Kennamer, Leslie N. Sierad, Ovidiu Cotoi, Marius Harpa, Terezia Preda, Dan T. Simionescu. "Progress Toward Interstitial Recellularization of Aortic Heart Valve Scaffolds". *Biomaterials Day Symposium*, Clemson, SC, November 2013.
95. Allison R. Kennamer, Leslie N. Sierad, Ovidiu Cotoi, Marius Harpa, Terezia Preda, Victor Raicea, Horatiu Suci, Dan T. Simionescu. "Interstitial Cell Seeding and Conditioning of Aortic Heart Valve Scaffolds". *Tissue Engineering and Regenerative Medicine International Society – Americas (TERMIS-AM)*, Atlanta, GA, November 2013.
96. Simionescu A, Simionescu D. "Stem Cell Differentiation and Cardiovascular Tissue Engineering". *Adult Stem Cell Therapy & Regenerative Medicine (MSC 2013)*, Cleveland, OH, August 19-21, 2013.
97. James Chow, Dan Simionescu, Harleigh Warner, Bo Wang, Surav Patnaik, Jun Liao, Agneta Simionescu. "Mitigation of Diabetes-Related Complications In Implanted Collagen And Elastin Scaffolds Using Matrix-

- Binding Polyphenol”, 5<sup>th</sup> International Congress and 31<sup>th</sup> Annual Meeting of the Romanian Society for Cell Biology, Timisoara, Romania, June 5-9, 2013. Oral presentation.
98. Pennel T, Oosthuysen A, Fercana G, Simionescu A, Zilla P, Bezuidenhout D, Simionescu D. “Evaluation of stabilized, decellularized xenografts in a small diameter circulatory animal model.” 1<sup>st</sup> International Symposium on Vascular Tissue Engineering. Leiden, the Netherlands, 28-29 May 2013. Oral presentation.
  99. Laura E. McCallum, Thomas Larrew, James Chow, Jason Schulte, Dan Simionescu, Agneta Simionescu. “Utilizing tissue engineering to study diabetic cardiomyopathy”. *Biomaterials Day Symposium*, Clemson, SC, November 2013.
  100. Laura E. McCallum, Thomas Larrew, James Chow, Jason Schulte, Dan Simionescu, Agneta Simionescu. “Metabolic and structural changes in diabetic cardiomyopathy; in vivo and in vitro models”. *Tissue Engineering and Regenerative Medicine International Society – Americas (TERMIS-AM)*, Atlanta, GA, November 2013.
  101. M. Thirugnanasambandam, D. Simionescu, E. Sprague, A. Voorhees, H. Han, E. Finol. “Regional Variation of the Mechanical Properties of Murine Aorta”. 7<sup>th</sup> World Congress of Biomechanics, Boston, MA, July 6-11, 2014.
  102. Michael Jaeggli, D. Simionescu. “Seeding and Repopulation of Acellular Heart Valve Matrices”. 14<sup>th</sup> Biannual Meeting of the International Society for Applied Cardiovascular Biology (ISACB), Cleveland, OH, April 2-5, 2014.
  103. D. Simionescu. “Bioengineering challenges in heart valve tissue regeneration”. Invited speaker at the Satellite Meeting “Stem Cells for Disease Modeling and Regenerative Therapeutics”. 14<sup>th</sup> Biannual Meeting of the International Society for Applied Cardiovascular Biology (ISACB), Cleveland, OH, April 2-5, 2014.
  104. Leslie N. Sierad, Eliza Laine Shaw, Allison Kennamer, Rebekah Odum, Marius Harpa, Ovidiu Cotoi, Terezia Preda, Radu Deac, Victor Raicea, Horatiu Suciu, Lucian Harceaga, Klara Branzaniuc, Imre Egyed, Zoltan Pavai, Anamaria Szanto, Bogdan Petcu, Agneta Simionescu, Dan T. Simionescu. “Bioreactor Technologies for Clinical Translation of Tissue Engineered Heart Valves”. 14<sup>th</sup> Biannual Meeting of the International Society for Applied Cardiovascular Biology (ISACB), Cleveland, OH, April 2-5, 2014.
  105. Paul A. Human, Helen J. Ilesley, Anel Oosthuysen, Ken Park, Janine de Witt, Agneta Simionescu, Dan Simionescu, Deon Bezuidenhout, Peter Zilla. “Decellularisation Mutes the Differential Response Between Bioprosthetic Porcine and Bovine Pericardial Tissue”. 14<sup>th</sup> Biannual Meeting of the International Society for Applied Cardiovascular Biology (ISACB), Cleveland, OH, April 2-5, 2014.
  106. James Chow, Dan Simionescu, Agneta Simionescu. “Adipose Tissue Derived Stem Cells and Polyphenols Reduce Diabetes Related Inflammation and Calcification in Tissue Engineered Vascular Constructs”. 14<sup>th</sup> Biannual Meeting of the International Society for Applied Cardiovascular Biology (ISACB), Cleveland, OH, April 2-5, 2014.
  107. Jason B. Schulte, Joshua Biggs, Dan T. Simionescu, Agneta Simionescu. “Differentiation of Adipose Stem Cells for Use in Myocardial Tissue Engineering”. 14<sup>th</sup> Biannual Meeting of the International Society for Applied Cardiovascular Biology (ISACB), Cleveland, OH, April 2-5, 2014.
  108. Leslie N. Sierad, Eliza Laine Shaw, Allison Kennamer, Rebekah Odum, Marius Harpa, Ovidiu Cotoi, Terezia Preda, Radu Deac, Victor Raicea, Horatiu Suciu, Lucian Harceaga, Klara Branzaniuc, Imre Egyed, Zoltan Pavai, Annamaria Szanto, Agneta Simionescu, Dan T. Simionescu. “Pre-clinical Testing of Stem Cell-Seeded Biological Scaffolds for Heart Valve Tissue Engineering”. 8<sup>th</sup> Symposium on Biologic Scaffolds for Regenerative Medicine, Silverado Resort, Napa, CA, April 24-26, 2014.
  109. Dan Simionescu. “Pre-clinical testing of cardiovascular scaffolds”. *First International Conference of the International Society for Regenerative Medicine and Surgery (ISRMS)*, Bucharest, Romania, June 12, 2014.
  110. Leslie N. Sierad, Eliza Laine Shaw, Rebekah Odum, Allison Kennamer, Marius Harpa, Ovidiu Cotoi, Terezia Preda, Lucian Harceaga, Victor Raicea, Imre Egyed, Zoltan Pavai, Anamaria Szanto, Horatiu Suciu, Klara Branzaniuc, Radu Deac, A. Simionescu, D. Simionescu. “Whole aortic root decellularization and recellularization: an elusive task in heart valve tissue engineering”. 6<sup>th</sup> Biennial Meeting on Heart Valve Biology and Engineering and Society of Heart Valve Disease (SHVD), London, UK, September 10-12, 2014.
  111. Leslie N. Sierad, Eliza Laine Shaw, Allison Kennamer, Rebekah Odum, Marius Harpa, Ovidiu Cotoi, Terezia Preda, Lucian Harceaga, Radu Deac, Victor Raicea, Horatiu Suciu, Klara Branzaniuc, Imre Egyed, Zoltan Pavai, Anamaria Szanto, A Simionescu, D. Simionescu. “Bioreactor technologies and testing of stem cell-seeded scaffolds for tissues engineered heart valves”. *Biomedical Engineering Society (BMES) Annual Meeting*, San Antonio, TX, Oct 22-25, 2014.
  112. C deBorde, J Liao, D Simionescu, A Simionescu. “Development of a tissue engineered mitral valve”. *Biomedical Engineering Society (BMES) Annual Meeting*, San Antonio, TX, Oct 22-25, 2014.

113. D Simionescu. "Heart valve tissue engineering and regeneration; scaffolds, stem cells and bioreactors". *International Biomaterials Symposium, Clemson University, SC, April 20, 2015.*
114. D. Simionescu. "Advances and challenges in stem cell based heart valve tissue engineering; in vitro bioreactor studies and in vivo sheep implantation". *2015 European Meeting of the International Society for Applied Cardiovascular Biology (ISACB), Nuremberg, Germany, December 3-5, 2015.*
115. D. Simionescu. "Heart valve tissue engineering: a tale of scaffolds, cells and stimuli". Lecture given at the *University of Pennsylvania, Philadelphia, PA. March 10, 2016. Invited lecturer.*
116. Marius Harpa, Ionela Movileanu, Allison Kennamer, Nicholas Rierison, Ovidiu Cotoi, Horatiu Suciu, Victor Raicea, Terezia Preda, Dan Nistor, Klara Branzaniuc, Radu Deac, Simona Gurzu, Lucian Harceaga, Peter Olah, Carmen Sircuta, A Simionescu, Michael Dandel, D. Simionescu. "How close are we to fully engineering a living heart valve? A tale of scaffolds, stem cells, bioreactors and sheep". *2<sup>nd</sup> Annual Scientific Meeting of the Heart Valve Society, New York, March 17-19, 2016. Oral presentation.*
117. Marius Harpa, Ionela Movileanu, Leslie Sierad, Ovidiu Cotoi, Horatiu Suciu, Carmen Sircuta, Agneta Simionescu, Terezia Preda, Dan Nistor, Loredana Harpa, Radu Deac, Klara Branzaniuc, Michael Dandel, Simona Gurzu, Lucian Harceaga, Peter Olah, Dan Simionescu. "Development of chemically stabilized acellular cardiac valve scaffolds and in vivo testing in a sheep right ventricular outflow tract model". *9th Biologic Scaffolds for Regenerative Medicine Symposium, Napa Valley, CA, 2016. Oral presentation.*
118. M Harpa, I Movileanu, L Sierad, O Cotoi, H Suciu, T Preda, D Nistor, K Branzaniuc, R Deac, S Gurzu, L Harceaga, L Harpa, P Olah, N Suciu, C Sircuta, A Simionescu, M Dandel, D Simionescu. "Regenerative Potential of Autologous Stem Cell Seeded, Polyphenol-Stabilized Acellular Valve Scaffolds in the Juvenile Sheep Model". *15<sup>th</sup> Biennial Meeting of the International Society for Applied Cardiovascular Biology (ISACB), Banff, Canada, Sept. 7-10, 2016. Oral presentation.*
119. D Simionescu, L Sierad, O Cotoi, T Preda, K Branzaniuc, R Deac, L Harpa, L Harceaga, P Olah, N Suciu, A Simionescu, M Harpa. "Advances and challenges in heart valve tissue regeneration using stem cell-seeded acellular valve scaffolds". *7<sup>th</sup> Biennial Heart Valve Biology and Tissue Engineering Conference, Hilton Head Island, SC, Oct. 12-14, 2016. Oral presentation. Abstract accepted but conference canceled due to hurricane Matthew.*
120. D Simionescu. "Biopathology of natural and artificial heart valves". *Scientific Symposium "The Universe within the cell", Bucharest, February 23-24, 2017. Oral presentation.*
121. A Simionescu, J Dhulekar, Z Hajdu, D Simionescu. "Vascular tissue engineering in diabetes". *Vascular Research Initiatives Conference, SVS/ATVB, Minneapolis, May 3-6, 2017. Oral presentation.*
122. Marius Harpa, Radu Deac, Horatiu Suciu, Michael Dandel, Simona Gurzu, Lucian Harceaga, Husam Al Hussein, Marius Beleaua, Terezia Preda, Ionela Movileanu, Loredana Harpa, Hamida Al Hussein, Oana Moldovan, Zoltan Pavai, Imre Egyed, Carmen Sircuta, Dan Nistor, Klara Branzaniuc, Azamfirei Leonard, Minodora Dobreanu, Alina Scridon, Olah Peter, Nicoleta Suciu, Ovidiu Cotoi, Megan Casco, Margarita Portilla, Agneta Simionescu, Leslie Sierad, Dan Simionescu. "Tissue engineering technologies for cardiac valve regeneration using stem cells and biological scaffolds (VALVE-REGEN)". *Second International Conference of the International Society for Regenerative Medicine and Surgery (ISRMS), Bucharest, Romania, June 14-17, 2017. Oral presentation.*
123. Simionescu A, Dhulekar J, Hajdu, Z, Simionescu, D. "Vascular Tissue Engineering in Diabetes". *American Heart Association / Arteriosclerosis Thrombosis and Vascular Biology Conference, Minneapolis, MN, May 04-06, 2017. Published Volume: 37, Supplement: 1, Meeting Abstract: 167, Published: MAY 2017. Oral presentation.*
124. Simionescu Dan, Marius Harpa, Radu Deac, Horatiu Suciu, Michael Dandel, Simona Gurzu, Lucian Harceaga, Husam Al Hussein, Marius Beleaua, Terezia Preda, Ionela Movileanu, Loredana Harpa, Hamida Al Hussein, Oana Moldovan, Zoltan Pavai, Imre Egyed, Carmen Sircuta, Dan Nistor, Klara Branzaniuc, Leonard Azamfirei, Minodora Dobreanu, Alina Scridon, Peter Olah, Nicoleta Suciu, Ovidiu Cotoi, Megan Casco, Margarita Portilla, Agneta Simionescu. "In vitro regeneration of living aortic and pulmonary valve roots and preclinical testing". *International Society for Applied Cardiovascular Biology (ISACB) off-year meeting, session organized within the 50th Anniversary of the First Human Heart Transplant, Cape-Town, South Africa, Dec 3-5, 2017. Oral presentation.*
125. Ionela Movileanu, Klara Branzaniuc, Marius Harpa, Ovidiu Cotoi, Terezia Preda, Hamida Hussein, Dan Simionescu. „Cryopreservation – a time buyer solution for stem cells in regenerative medicine research". *10th Annual Scientific Session for PhD students and Young Doctors of the University of Medicine and Pharmacy, Dec 13, 2017, Targu Mures, Romania. Oral presentation.*
126. Megan Casco, Dan Simionescu. "Tissue Engineered Living Aortic Heart Valve Roots: In vitro Characterization and Revitalization." *Society for Biomaterials, Atlanta, April 11-13, 2018.*

127. Marius Harpa, Radu Deac, Horatiu Suciu, Michael Dandel, Simona Gurzu, Lucian Harceaga, Husam Al Hussein, Marius Beleaua, Terezia Preda, Ionela Movileanu, Loredana Harpa, Hamida Al Hussein, Oana Moldovan, Zoltan Pavai, Imre Egyed, Carmen Sircuta, Dan Nistor, Klara Branzaniuc, Azamfirei Leonard, Minodora Dobreanu, Alina Scridon, Olah Peter, Nicoleta Suciu, Ovidiu Cotoi, Megan Casco, Margarita Portilla, Agneta Simionescu, Leslie Sierad, Dan Simionescu. “New developments and challenges in cardiac valve regeneration using stem cells and biological scaffolds (VALVE-REGEN)”. *10<sup>th</sup> Symposium on Biologic Scaffolds for Regenerative Medicine, Silverado Resort, Napa, CA, May 3-5, 2018*. Oral presentation.
128. Dan Simionescu, Clayton Compton, Jessica Canavan, John Mcleod, Connor Prevost, Megan Casco, Margarita Portilla, Benjamin Fisher, Agneta Simionescu. “Regeneration of the ventricular endocardium and heart valve tissues using layer-by-layer seeding of acellular biologic scaffolds”. *16<sup>th</sup> Biennial Meeting of the International Society for Applied Cardiovascular Biology (ISACB), Bordeaux, France, Sept. 16-19, 2018*. Poster presentation.
129. Megan Casco, Dan Simionescu. “Tissue Engineered Aortic Heart Valve Roots: In vitro Characterization and Cell Sourcing”. *Biomedical Engineering Society (BMES) Annual Meeting, Atlanta, GA, Oct 17-20, 2018*. Poster presentation.
130. Margarita Portilla, Erica Brophy, Dan Simionescu. “Differentiation of adipose-derived stem cells into endothelial cells for pulmonary valve re-endothelialization”. *Biomedical Engineering Society (BMES) Annual Meeting, Atlanta, GA, Oct 17-20, 2018*. Poster presentation.
131. Dan Simionescu, Marius Harpa, Radu Deac, Horatiu Suciu, Michael Dandel, Simona Gurzu, Lucian Harceaga, Husam Al Hussein, Marius Beleaua, Terezia Preda, Ionela Movileanu, Loredana Harpa, Hamida Al Hussein, Oana Moldovan, Zoltan Pavai, Imre Egyed, Carmen Sircuta, Dan Nistor, Klara Branzaniuc, Leonard Azamfirei, Minodora Dobreanu, Alina Scridon, Peter Olah, Nicoleta Suciu, Ovidiu Cotoi, Megan Casco, Margarita Portilla, Agneta Simionescu. “Cardiac valve replacement using naturally derived scaffolds (VALVE-REGEN)”. *9<sup>th</sup> International Conference on Biopolymers and Polymer Sciences, Bucharest, Romania, November 19-21, 2018*. Oral presentation.
132. Dan Simionescu, Marius Harpa, Radu Deac, Horatiu Suciu, Simona Gurzu, Lucian Harceaga, Husam Al Hussein, Terezia Preda, Ionela Movileanu, Loredana Harpa, Hamida Al Hussein, Oana Moldovan, Carmen Sircuta, Dan Nistor, Klara Branzaniuc, Leonard Azamfirei, Minodora Dobreanu, Alina Scridon, Peter Olah, Nicoleta Suciu, Ovidiu Cotoi, Megan Casco, Margarita Portilla, Agneta Simionescu. “Tissue engineering technologies for cardiac valve regeneration using stem cells, matrix scaffolds and bioreactors (VALVE-REGEN). *17th Biennial Meeting of the International Society for Applied Cardiovascular Biology (ISACB), Zurich, Switzerland, June 19-21, 2019*. Oral presentation.
133. Dan Simionescu, Marius Harpa, Radu Deac, Horatiu Suciu, Simona Gurzu, Lucian Harceaga, Husam Al Hussein, Terezia Preda, Ionela Movileanu, Loredana Harpa, Hamida Al Hussein, Oana Moldovan, Carmen Sircuta, Dan Nistor, Klara Branzaniuc, Leonard Azamfirei, Minodora Dobreanu, Alina Scridon, Peter Olah, Nicoleta Suciu, Ovidiu Cotoi, Megan Casco, Margarita Portilla, Agneta Simionescu. “The VALVE-REGEN project; extracellular matrix scaffolds, adult stem cells and bioreactors for cardiac valve tissue regeneration”. *The 40th Anniversary Symposium of ICBP, Bucharest, Romania, Sept. 19-20, 2019*. Oral presentation.
134. Dan Simionescu, Megan Casco, Jake Turner, Nicholas Rierison, Jianing Yue, Kelvin Ning. “Chemical Stabilization of the Extracellular Matrix Attenuates Growth of Experimentally Induced Abdominal Aorta Aneurysms in a Large Animal Model”. Oral Presentation. *American Heart Association / Arteriosclerosis Thrombosis and Vascular Biology Conference (AHA/ATVB), Vascular Discovery: From Genes to Medicine, A Virtual Event, May 05-07, 2020*. Oral Presentation.

#### **D. RESEARCH SUPPORT; TOTAL AWARDED \$ 11 MILLION**

##### **CURRENT**

NIH P30 GM131959 COBRE Phase III

PI: N. Vyavahare

2019-2024

“SC Bioengineering Center of Regeneration and Formation of Tissues (SCBioCRAFT)”

\$11 million / 5 years

The goal is to develop South Carolina’s capabilities for Translational Regenerative Medicine research.

Role: **Director** of the “Clemson Translational Research and Imaging Core”; total \$1.25 million available to DS.

Nectero Medical Inc. PI: D. Simionescu 2018-2020  
 “PGG-mediated stabilization and treatment of developing abdominal aorta aneurysms” \$38,000 / 24 months  
 Industrial Research Contract aimed at evaluating approaches to treatment of AAA.

NIH 1R56HL130950-01 PI: D. Simionescu 2016-2019  
 “Functional tissue engineering and regeneration of the aortic root” \$400k/ 2 years  
 The goal of this bridge grant is to develop in vitro regenerated valves from scaffolds and adipose derived stem cells grown in heart valve bioreactors. The data is expected to be used for a revised R01 submission.  
 Role: PI

American Heart Association PI: E. Finol 2016-2019  
 “Mechanistic justification for penta-galloyl-glucose mediated AAA suppression” \$750k / 3 years  
 The goal is to understand AAA formation and suppression by PGG, an elastin binding polyphenol.  
 Role: Co-PI; total \$25k available to DS.

Romanian Research Ministry PI: D. Simionescu 2016-2021  
 "Tissue engineering technologies for cardiac valve regeneration" \$2.26 million / 5 years  
 The goal of this R01-equivalent grant is to test in vitro regenerated valves from scaffolds and adipose derived stem cells by orthotopic implantation in adult sheep.  
 Role: PI

NIH P20GM103444 COBRE PI: N. Vyavahare 2014-2020 (NCE)  
 “SC Bioengineering Center of Regeneration and Formation of Tissues (SCBioCRAFT)” \$11 million / 5 years  
 The goal is to develop South Carolina’s capabilities for Regenerative Medicine research.  
 Role: **Director** of the “Cell, Tissue and Molecular Analysis Core”; total \$1.25 million available to DS.

## COMPLETED

TIGER grant; Clemson University PI: D. Simionescu 2016  
 "Adult stem cell therapy for osteoarthritis in veterinary medicine; clinical studies and bioengineering platform technologies". \$20k / 1 year  
 The goal of this bridge grant is to test potential of adult adipose derived stem cells to alleviate symptoms of osteoarthritis in dogs and to generate data for larger grant submissions.  
 Role: PI

Heartware Inc. PI: D. Simionescu 2015-2017  
 “Evaluation of MVAD-Related Aortic Valve Injury” \$56,000 / 2 years  
 Industrial Research Contract aimed at evaluating novel LVAD devices using in vitro flow loops and bioreactors.

RO1 HL093399-01A1 PI: D. Simionescu 2010-2015  
 “Tissue engineering aortic heart valves; scaffolds and cells” \$1.5 million / 4 years  
 The goal of this RO1 is to develop tissue engineered aortic valves from collagen scaffolds and stem cells.  
 Role: PI

Romanian Research Ministry PI: D. Simionescu 2012-2016  
 "Stem cell seeded collagen scaffolds for valve tissue engineering" \$1.6 million / 4 years  
 The goal of this R01-equivalent grant is to test valve scaffolds in adult sheep.  
 Role: PI

NIH/FIRCA(RO3) PI: D. Simionescu 2011-2015  
 “Elastin scaffolds for small diameter vascular grafts” \$170 k / 3 years  
 The goal of this project is to develop and test acellular artificial arteries in animal models.  
 Role: PI

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------------------------|
| <u>VentureWell E-Team #12840-15</u><br>"Aptus Bioreactors"                                                                                                                                                                                                                                           | PI: <u>D. Simionescu</u> | 2015<br><u>\$5,000</u>                       |
| The project involves development of cardiovascular bioreactors for research and translational activities. The professional goal of Phase 1 is to train and develop entrepreneurship capabilities of teams of students and professionals involved with a start-up.<br><u>Role: PI and team mentor</u> |                          |                                              |
| <u>The Hawkins Foundation</u><br>"Efficacy of rotator cuff regeneration using stem cells"                                                                                                                                                                                                            | PI: <u>D. Simionescu</u> | 2011-2013<br><u>\$20k / 2 years</u>          |
| <u>Role: PI</u>                                                                                                                                                                                                                                                                                      |                          |                                              |
| <u>NIH R21 EB009835-01</u><br>"Cardiovascular Tissue Engineering in Diabetes"                                                                                                                                                                                                                        | PI: Agneta Simionescu    | 2010-2013<br><u>\$500 k / 3 years</u>        |
| The goal of this project is to investigate role of diabetes in vascular tissue engineering.<br><u>Role: Co-PI; total \$50k available to DS.</u>                                                                                                                                                      |                          |                                              |
| <u>Vascular Solutions Inc.</u><br>"Testing of drug-loaded microspheres"                                                                                                                                                                                                                              | PI: <u>D. Simionescu</u> | 2011-2012<br><u>2k / 2 years</u>             |
| This project tested biocompatibility and efficacy of drug-loaded microspheres in vitro.<br><u>Role: PI</u>                                                                                                                                                                                           |                          |                                              |
| <u>NSF equipment grant (MRI)</u><br>"Acquisition of a nano-to-micro scale 3D imaging system".                                                                                                                                                                                                        | PI: J. Nagatomi          | 2009-2011<br><u>\$250 k / 2 years</u>        |
| Major instrumentation grant to acquire a confocal –AFM imaging station for the department.<br><u>Role: Co-PI; access to the AFM/confocal imaging system</u>                                                                                                                                          |                          |                                              |
| <u>NIH R21</u><br>"Bioactive Scaffolds for Vascular Surgery"                                                                                                                                                                                                                                         | PI: <u>D. Simionescu</u> | 2006-2009<br><u>\$500 k / 3 years</u>        |
| The goal of this project was to develop vascular scaffolds from elastin-based biomaterials.<br><u>Role: PI</u>                                                                                                                                                                                       |                          |                                              |
| <u>NIH RO1</u><br>"Calcification of Elastin: Mechanisms and Prevention"                                                                                                                                                                                                                              | PI: Vyavahare, N         | 2000-2010<br><u>\$2.8 million / 10 years</u> |
| This project studied mechanisms of elastin calcification and targeted treatments.<br><u>Role: Co-PI; total \$600k available to DS.</u>                                                                                                                                                               |                          |                                              |
| <u>NIH R21</u><br>"Treatment of Aortic Aneurysms"                                                                                                                                                                                                                                                    | PI: Vyavahare, N         | 2006-2009<br><u>\$500 k / 3 years</u>        |
| The goal was to develop a procedure for non-invasive treatment of aneurysms by elastin stabilization<br><u>Role: Co-PI; total \$200 available to DS.</u>                                                                                                                                             |                          |                                              |
| <u>NIH RO1</u><br>"GAGs; function and fixation in bioprosthetic heart valves"                                                                                                                                                                                                                        | PI: N. Vyavahare         | 2008-2012<br><u>\$1.4 million / 4 years</u>  |
| The goal was to develop a procedure for GAG fixation and stabilization in heart valves.<br><u>Role: Co-PI; total \$400 available to DS.</u>                                                                                                                                                          |                          |                                              |
| <u>SC INBRE program</u><br>"Elastin stabilization in cardiovascular implants"                                                                                                                                                                                                                        | PI: L. Dooley            | 2007-2010<br><u>\$175 k / 3 years</u>        |
| This project investigated use of polyphenols for elastin stabilization in heart valve implants.<br><u>Role: Leader Target project #1 (Co-PI); total \$150 available to DS.</u>                                                                                                                       |                          |                                              |

## **FACILITIES**

Currently I serve as Director of two **basic and applied research** facilities; one in Rhodes Hall/Clemson Bioengineering Department, and a second at the University of Medicine and Pharmacy in Targu Mures, Romania

- The **Biocompatibility and Tissue Regeneration Laboratories (BTRL)** formed in 2006, is situated in the Rhodes Research Center, Department of Bioengineering at Clemson University. The facility occupies about 900 square feet split into three labs: Rhodes 507 - focused on basic research, cell biology and biochemistry and Rhodes 514 focused on bioreactor development and Rhodes 502 for biomechanical testing.
- The **Tissue Engineering and Regenerative Medicine Laboratory (TERMLab)** formed in 2011, is situated within the Department of Anatomy at the University of Medicine and Pharmacy in Targu Mures, Romania. The lab occupies about 1000 square feet and is co-directed by Professor Klara Branzaniuc, head of the Anatomy Department. The lab focuses on experimental translational medicine and large animal testing of scaffold and stem cell-based implants.

## TEACHING AND MENTORING ACTIVITIES

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### TEACHING

- **BIOE 8460** – “Biomedical Basis for engineered Replacements”; Core class, Fall semester, 3 credits. Taught to about 30-40 students every year. Newly revised course. Covers anatomy, physiology, pathology and devices. Based on 3 years of student evaluations, the average teaching effectiveness is 4.9-5.0 (out of 5.0). Since 2007.
- **BIOE 4020** – “Biocompatibility” with Lab; Technical elective, Spring or Fall semester, 3 credits, about 8-15 students per semester when offered. This is a new course developed by me. Covers ISO 10993, FDA, tissue reactions to implants, hands-on labs with cell culture and animal implants. Based on 2 of years student evaluations, the average teaching effectiveness is 5.0 (out of 5.0).
- **BIOE 4230/6230** – “Cardiovascular engineering”. Technical elective. Spring Semester 3 credits. Co-instructor of record, 60-80 students per year. Covers cardiovascular anatomy and pathology, devices and tissue engineering. Based on 3 years of student evaluations, the average teaching effectiveness is 4.6-4.8 (out of 5.0). Since 2010.
- **BIOE 4500/4910** – Special topics/undergraduate research, Fall and Spring semesters, 3 credits. About 4-8 undergraduate students are advised every semester in my lab. Technical elective. Please see below for detailed info on my work with undergraduates. Based on 3 years of student evaluations, the average teaching effectiveness is 5.0 (out of 5.0).
- **BIOE 891/991** – Master’s and Doctoral research; Fall, Spring and Summer semesters, core class. About 1-3 MS students per year. Please see below for more details. Based on 3 years of student evaluations, the average teaching effectiveness is 5.0 (out of 5.0). Since 2006.

### MENTORING/ADVISING

**Overview** – currently my group entitled the **Biocompatibility and Tissue Regeneration Laboratories (BTRL)** consists of **8 students** (4 graduate students and 4 undergraduate students).

Website: [www.clemsonbtrl.com](http://www.clemsonbtrl.com)

**TOTAL GRADUATE STUDENTS MENTORED** (total 25, of which 21 graduated, 4 current)

**STUDENTS GRADUATED FROM MY GROUP** (total 22, of which 7 PhD and 15 MS)

1. Leslie Sierad – **graduated with MS in May 2009**: “Development and testing of heart valve bioreactors”. Continued with **PhD** under my supervision.
2. Mary Elisabeth (Betsy) Tedder – **graduated with PhD in Dec 2010**. Title: “Novel tissue engineered heart valve”. Scientist at Wright Medical Inc, Memphis, TN.
3. Ting-Hsien (Tom) Chuang – **graduated with PhD in Dec 2010**. Title: “Bioactive tissue engineered blood vessels”. Scientist at the tissue engineering company “Modern Meadows Inc”, Brooklyn, NY.
4. Jeremy Mercuri – **graduated with PhD in Dec 2011**. Title of thesis: “Hybrid device for replacement of intervertebral discs”. Senior Research Engineer at Stryker in 2012, currently Assistant Professor at Clemson Bioengineering.
5. Richard Pascal – **graduated with MS in August 2012**. Title of thesis: “Dynamic Endothelialization of Aortic Heart Valve Scaffolds”. Currently acting as CEO of a startup company in Greenville, SC.
6. Grace Dion – **graduated with MS in May 2013**. Title of thesis: “Rotator cuff regeneration using stem cells”. Student at the Medical University of SC.
7. Tara Britton - **graduated with non-thesis MS in May 2013**. Title of thesis: “Novel developments in drug eluting stents”. Admitted to Pharmacy school in NJ.

8. Kathryn Jaeggli – **graduated with non-thesis MS in May 2013**. Title of thesis: “Development of a spine bioreactor”. Currently home-maker.
9. Natasha Topoluk – **graduated with MS in Dec 2013**. “Tissue engineering using niche scaffolds for brain trauma injuries”. Student in Medical School.
10. Erin Pardue-Sproul – **graduated with PhD in Dec 2013**. Title of thesis: “Novel Pathways for Elastin Regeneration”. PhD co-advisor. Employed in the NC Chapel Hill area.
11. George Fercana – **graduated with PhD in Dec 2013**. Title of thesis: “Vascular graft technologies”. Post-doc at the University of Pittsburg, Dr Julie Philippi’s lab.
12. Allison Kennamer - **graduated with MS in Dec 2013**. “Cell seeding of tissue engineered heart valves”. Product specialist at WL Gore Inc., Flagstaff, AZ.
13. Leslie Sierad – **graduated with PhD in August 2014**: “Bioreactor-conditioned tissue engineered heart valves”. CEO and founder of Aptus Bioreactors, LLC.
14. Katelyn Rye – “Novel methods for cell seeding and conditioning of vascular grafts”. **Graduated with MS in Dec 2014**. Validation Engineer at Pfizer, Rocky Mount, NC.
15. Michael Jaeggli – “Layered scaffolds for heart valve tissue engineering”. **Graduated with PhD in May 2015**. Teaching faculty at Northeastern University, Boston, MA.
16. Chris Ferreira – “Novel scaffold seeding techniques for vascular regeneration”. **Graduated with MS in May 2016**. Working at the FDA.
17. Brady Culbreth – “Matrix hydrogels for tissue regeneration”. **Graduated with MS in May 2016**. Scientist at Philips Healthcare in the Boston area.
18. Jessica Canavan – “Scaffolds for myocardial regeneration”. **Graduated with MS in May 2016**. Project manager at Alcimed Inc. in Princeton, NJ.
19. Harrison Smallwood – “Small diameter vascular grafts”. **Graduated with MS in Aug 2017**. Validation engineer at Project Farma Inc.
20. Clayton Compton – “Regeneration of the ventricular endocardium”. **Graduated with MS in May 2018**. Seeking employment.
21. Megan Casco – “Scaffolds for valve regeneration”. **PhD. Graduated with PhD in May 2019**. Scientist at Visikol.
22. Benjamin (Jesse) Fisher – “Seeding of vascular scaffolds”. **MS. Graduated May 2020**.

#### **CURRENT GRADUATE STUDENTS (total 4)**

1. Nicholas Rierson – “Bioreactor testing of valve dynamics”. **PhD**. Expected graduation Dec 2021.
2. Margarita Portilla – “Stem cells for cardiovascular regeneration”. **PhD**. Expected graduation May 2021.
3. Juan Carlos Carrillo Garcia – “Vascular grafts for diabetic patients”. **PhD**. Expected graduation May 2022.
4. Emilia Musial – “Cell seeding technologies for regenerative medicine”. **MS**. Expected graduation May 2021.

#### **POST-DOCS and JUNIOR FACULTY ADVISED (total 6)**

1. Jeremy Mercury, PhD, post-doc 2011-2012, assistant professor of Bioengineering 2013-present.
2. Zoltan Hajdu, MD, PhD – post-doc, June-September 2014. Research Faculty, September 2014-present.
3. Leslie Sierad, PhD – post-doc, Bioengineering August 2014-2015.
4. Andrew Tennyson, PhD, Assistant professor Chemistry, Materials Science, September 2014-2016.
5. Brian Booth, PhD, Assistant professor Bioengineering, 2015-present.
6. Modi Wetzler, PhD, Assistant professor Chemical Engineering, 2016-present.

#### **GRADUATE THESIS / DISSERTATION COMMITTEES (total 112)**

#### **UNDERGRADUATE STUDENTS (total 90 mentored, including 12 honors thesis)**

#### **DESIGN CLASS FACULTY ADVISOR**

In 2009, 2013 and 2014 I acted as Faculty Advisor for 2 senior design teams, participating in weekly meetings and helping with hands-on expertise.

#### **ACADEMIC ADVISING**

- **Academic Advisor** for about 22-24 Bioengineering Undergraduate students **per semester; 2007-2016**.

## **SERVICE**

### **UNIVERSITY COMMITTEE WORK**

- Departmental representative on the college's ballot for VPR Search Committee Representative
- Animal research committee (ARC/IACUC); 2007-2010. Served as alternate member.
- College of Engineering and Science Awards sub-Committee, 2009-present. Served as reviewer for college award applications, subcommittee for 2 awards.

### **DEPARTMENT COMMITTEE WORK**

- Departmental awards Committee Chair, 2009-present. Organized yearly Awards Ceremony.
- CoES awards subcommittee for Junior and Senior Engineering Awards. Since 2015.
- INBRE Summer Workshop Committee, member.
- Creative Inquiry Committee, member.
- ABET Committee, member.
- BIOE Syllabus Committee, member.
- PhD Curriculum Committee, member.
- MS Curriculum Committee, member.
- Strategic Plan Task Force, member.
- Undergraduate Curriculum Committee, member.
- Tenure Promotion and Reappointment (TPR) Committee, member. 2014; 2016-present.

### **WORKSHOP CO-ORGANIZER**

Every year during 2006-2009 I co-organized a 2 day Histology Workshop for our summer students under the auspices of INBRE Summer Workshop Series.

### **OUTREACH FOR HIGH SCHOOL STUDENTS**

During 2007-2010 I presented one lecture for the Summer Bioengineering Enrichment Program "Bioengineering: Building a Better You! (BioE BABY!)" for high school students.

### **PUBLIC OUTREACH**

- I presented a class and lead discussions for the Osher Lifelong Learning Institute (OLLI) outreach for senior citizens interested in science "Current Topics in Bioengineering", 2009.
- I also presented a class and lead discussions for "Science on Tap" an outreach activity for community members interested in science "Current Topics in Bioengineering". Held at Moe-Joe Café in Clemson in 2015.